HEWLETT-PACKARD

Integral Personal Computer

User's Guide

Integral Personal Computer

User's Guide

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1 Getting Started

Are You Ready?

This guide assumes that you have already performed the following steps:

1. Unpacked your computer and checked the contents against the illustrated packing list.
2. Read the software license and warranty.
3. Set up your computer according to the pictorial instructions in the setup guide.
4. Started the tutor program.
5. Installed the print head cartridge and loaded printer paper according to the pictorial instructions in the setup guide.
6. Completed chapter 1, "Getting Started," of the tutor program.

Please proceed now as follows:

- If you have completed all these steps, skip ahead to "About the Tutor" on page 1-5.
- If you haven't tried these steps yet, do so before continuing with this guide.
- If you tried these steps and had problems, read the following information for help.

Was the voltage switch set wrong? The setup guide shows you how to check that your computer's voltage setting matches the voltage of your ac power source. (The voltage of your ac power source is shown pictorially by the type of power cord that fits your power outlet.)

To avoid damage to the computer, check the voltage selector switch before applying power.

To avoid electrical shock to yourself and damage to the computer, use only the power cord specified by Hewlett-Packard for your area. Any replacement cord must have the same polarity as the original.

Your computer must have the correct power cord, voltage setting, and fuse for the ac power source in your area. If the power cord and voltage setting are correct, you can assume that the fuse is also correct.

You may need to change the setting of the voltage switch or change the fuse if:

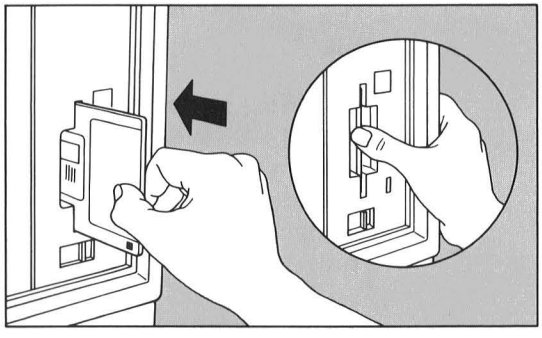
- The voltage switch isn't set to the voltage of your ac power source. In this case, you must change the setting of the voltage switch and check that the correct fuse is installed.
- The power cord with your computer isn't correct for your area. In this case, you must check the setting of the voltage switch and check that the correct fuse is installed.
- You travel with your computer to a country with a different power system. If you need to use a different power cord, you may also need to change the voltage setting and the fuse.

The procedures for changing the setting of the voltage switch appear on page A-6. The procedures for checking and changing the fuse appear on page A-8.

Were you unable to insert the tutor disc? The computer is shipped with a dummy disc inserted to protect the disc drive. Make sure you've ejected the dummy disc before you try to insert the tutor disc. You should save the dummy disc with the packing carton in case you need to ship your computer.

Did the tutor program fail to start? When you insert the tutor disc and then turn on the computer, the computer reads the tutor program from the disc (which takes a minute or two) and then starts the tutor program. If the tutor program didn't start automatically, make sure that:

- You inserted the correct disc.
- You inserted the tutor disc correctly and completely. (Check the orientation of the disc in the illustration below. Push the disc in until it clicks into place.)



- The computer has power. (Make sure that there is power to your power outlet; that the power cord is connected to both the power outlet and the computer; that the power button is depressed.)

Is the printer having problems? The setup guide shows you how to install the print head cartridge and how to load fanfold printer paper. (You can also use single sheets of paper, feeding them into the printer one at a time.) For best results, use paper intended for Hewlett-Packard ThinkJet printers. If the quality of printing is poor, refer to appendix A for ways to fix the print head cartridge. If you think there is something wrong with the printer itself, refer to page A-5 for the printer test procedure.

Does the keyboard (or mouse) have no effect? If pressing keys on the keyboard seems to have no effect, or if rolling the mouse doesn't move the display pointer, follow these steps:

1. Switch off the computer (the button should be flush with the case).
2. Make sure the keyboard (and mouse) are plugged in. It doesn't matter which plug goes in which receptacle.
3. Switch on the computer (the button should be recessed).

Did the display turn off? The computer keeps track of how long it's been since you gave it input (keystrokes or mouse movement) or a program gave it output (information sent to the display). If 15 minutes passes without input or output, the computer turns off the display. To turn the display on again, press any key.

Other problems? The computer tests itself each time you switch it on. If it finds a problem, it will display an error message in the copyright window that appears when you turn on the computer. If this happens, make a note of the message and refer to the support guide for information about obtaining service. If the computer appears operational but won't run the tutor program, you can test the computer hardware by running the customer diagnostic disc. Instructions for the diagnostic disc are on page A-8.

If the computer passes the diagnostic tests but still won't run the tutor program, refer to the support guide for information about getting help.

About the Tutor

The contents of this guide are similar to the contents of the tutor. If you're a beginner, the tutor is ideal because you can practice using the computer while you learn. If you're comfortable with the computer, this guide is handy because you can quickly find the steps needed to perform a task. Choose the presentation you prefer.

Here is the table of contents for the tutor:

Chapter 1: Getting Started

Information for everyone.

Lesson 1: Are You Ready?
For first-time users.

Lesson 2: Using the System
Includes *window shuffling.*

Lesson 3: Setting the Time and Date
You only need to do this once or twice a year.

Lesson 4: Checking the Time
In which you create a small clock window.

Lesson 5: Starting Over
For those rare times when a system reset is in order.

Chapter 2: Running a Program

The reason for having a computer.

Lesson 1: Starting a Program
You'll insert a disc, pick a program, and go.

Lesson 2: Inverting Window Colors
You have a choice—black on amber, or *vice versa.*

Lesson 3: Stopping a Program
Use the (Stop) key or a function key.

Lesson 4: Updating PAM
To reread your disc and update the display.

Chapter 3: Typing Your Information

Keyboard practice.

Lesson 1: Entering Text
You'll practice the typing keys.

Lesson 2: Editing Text
You'll use (Insert char), (Delete char), etc.

Lesson 3: The Electronic Typewriter
Not exactly a word processor but fun nonetheless.

Chapter 4: Viewing and Printing Information

Printed copies.

Lesson 1: Viewing a Text File
You'll highlight a file name and press View

Lesson 2: Positioning the Paper
How to load paper, advance paper, and set top-of-form.

Lesson 3: Copying the Display
You'll use the (Shift)(Print) keystroke.

Lesson 4: Checking the Printer
A simple self-test.

Lesson 5: Printing a Text File
You'll use the `print` command.

Chapter 5: Protecting Your Information

Disc and file backups.

Lesson 1: Safeguarding Your Discs
How to handle and protect discs.

Lesson 2: Making Extra Disc Copies
Includes formatting and copying instructions.

Lesson 3: Making Extra File Copies
You'll use the Copy key.

Chapter 6: Organizing Your Information

File manipulations.

Lesson 1: Finding Files
You'll open and close folders to get at the files within.

Lesson 2: Renaming Files and Discs
You'll use the Rename key and rename_disc program.

Lesson 3: Moving Files Into Folders
You'll create a new folder and put a file in that folder.

Lesson 4: Copying Files Across Discs
You'll use the Copy key.

Lesson 5: Deleting Files and Folders
You'll use the Delete key.

Chapter 7: Managing Windows

In which your programs run.

Lesson 1: Selecting Windows
You'll study how programs fit into windows.

Lesson 2: Pausing and Restarting Windows
You'll use the Pause key.

Lesson 3: Hiding and Showing Windows
You can put away and take out windows at will.

Lesson 4: Moving and Stretching Windows
You'll move and change the size of a sample window.

About the Discs

Your computer is shipped with several discs that are part of the basic computer system. Some, such as the tutor disc, are for beginners; others, such as the HP-UX commands, are for advanced users. The tasks described in this guide involve the utilities disc (in chapters 5 and 6) and the diagnostic disc (in appendix A).

Each of these discs contains a text file named `README` that describes the contents of the disc. Chapter 4 in this guide teaches you how to view or print a `README` file.

About The Documentation

Your Integral PC is shipped with four documents other than this guide.

- The *Software License and Warranty* describes your rights to use the software you received with the computer. It also describes the warranty for the software.
- The *Setup Guide* shows you how to set up your computer, install the print head, load paper and set top-of-form, and prepare the computer for moving.
- The *Support Guide* describes the warranty for your computer and how to obtain service.
- The *Comprehensive Guide* covers basic operations in greater detail than the user's guide. It also covers additional material, such as using peripherals and advanced use of the computer.

Using This Guide

This guide gives you step-by-step instructions for using the computer. You should complete at least the first two chapters in this guide (or in the tutor) before running an application or going on to later chapters. You can read the later chapters in any order, as you need them.

The first two chapters describe each step in detail. Some steps include alternative methods using the optional mouse. The step-by-step instructions in later chapters omit the details for each step.

This guide uses symbols to help you locate and identify information. The symbols have the following meanings:

This symbol marks instructions for using the optional mouse.

This symbol marks a warning that you should observe to avoid bodily injury.

This symbol marks a caution that you should observe to avoid damage to the computer or serious loss of data.

This symbol marks a note that you should observe to avoid minor problems.

This symbol marks a reference to more detailed information or to related topics.

Introducing the Display Pointer

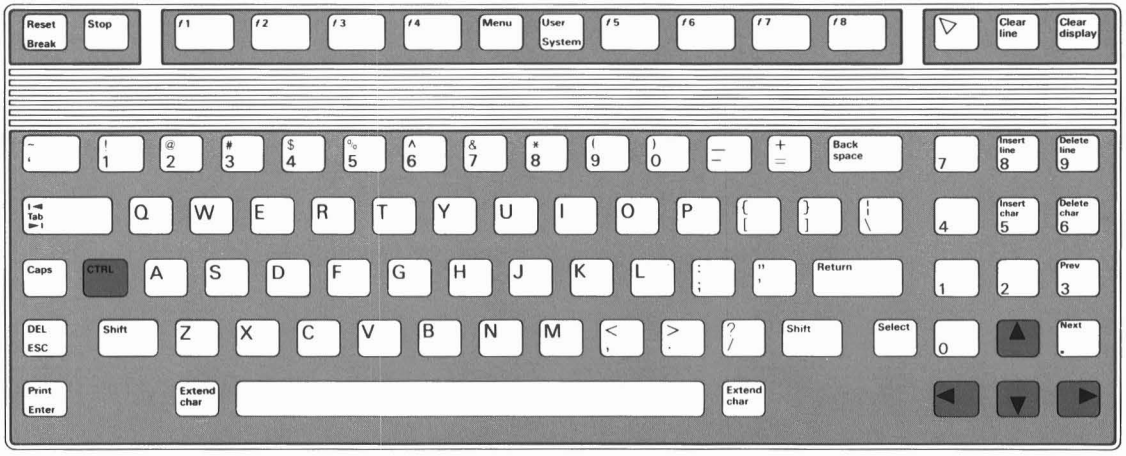
The rest of this chapter reviews material covered in chapter 1 of the tutor. If you haven't run the tutor yet, do so now. Because this material is essential to everything that follows, it's worthwhile to use the tutor and then come back here for a review.

The display shows a small figure called the *display pointer*. It usually looks like an arrow, but it looks like a diamond when it points to the background, or it can take a special shape when it points to a window that redefines it. The display pointer allows you to control the computer by choosing an item or location.

To use the display pointer:

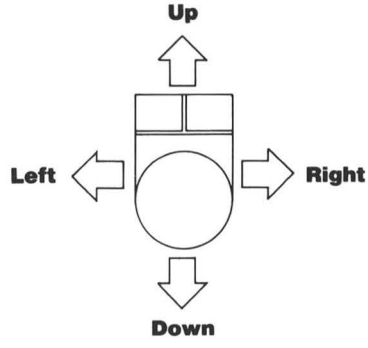
1. Move the display pointer to the desired item or location.

   Hold down the (CTRL) key while pressing the arrow keys.



You can move the display pointer diagonally by holding down the (CTRL) key while pressing a pair of arrow keys.

If you're using a mouse, just roll the mouse in the direction you want the display pointer to move.

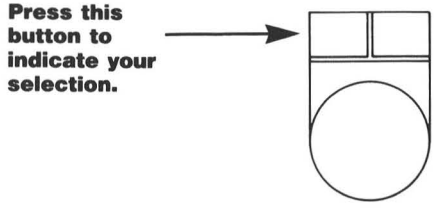


You can lift and reposition the mouse on your desk without moving the display pointer.

2. Indicate your selection.

Press the (Select) key (just to the left of the arrow keys).

If you're using a mouse, press the left button.



(Pressing the right button turns off the menu. You can turn the menu back on by pressing the right button a second time.)

A few steps in the instructions in this guide require you to use the display pointer. More often there are two ways to perform a step, one of which uses the display pointer. If you have a mouse, you'll probably want to use the display-pointer method. This guide marks *optional* display-pointer methods with the mouse symbol. But remember that you can use the display pointer with or without a mouse.

Displaying the Time and Date

You should have already set the time and date, and then displayed the time and date, when you ran chapter 1 of the tutor. The time and date are maintained when you turn off the computer, so you won't need to set them again unless your local time changes.

The steps for displaying the time and date are repeated here. You'll use PAM to start a program named "time_of_day", which is stored on the utilities disc. Although displaying the time and date may not seem too important, the steps described in detail here appear again and again in this guide. Later chapters assume that you know how to perform them.

To display the time and date:

1. Select the PAM window.

   This step ensures that PAM is the *active window*—the window that receives your input. Look at the center of the bottom of the display. If it shows "PAM", PAM is already the active window. In this case, you don't need to do anything for this step.

   If PAM isn't already the active window, press (Shift)(Select). This keystroke *shuffles the windows*—it brings another window to the front and makes it the active window. Repeat this keystroke until PAM is the active window.

With a mouse, move the display pointer to PAM's *window banner* (the "PAM" in the upper-left corner of the display) and press the left button on the mouse. This brings the PAM window to the front and makes it the active window.

2. Insert the utilities disc.

If there is already a disc in the drive, make sure the red "drive busy" light is off. Then press the disc-eject button (near the upper-right corner of the drive opening), remove the disc, and insert the utilities disc. The red "drive busy" light flashes as the computer reads the utilities disc.

PAM updates its window to show the contents of the utilities disc:

```
PAM
 Personal Applications Manager (HP-UX)
 ------------------------------------------------------------------------------
Open Folder:  /util

  Programs:  beep_off          beep_on          copy_disc        disp_time_off
             disp_time_on      format_disc      mount_disc       plotter_is
             print_plot        printer_is       rename_disc      status
             terminate         time_of_day      unmount_disc     verify_disc

  Data Files: README           copy_dsc.doc     format_dsc.doc   rename_dsc.doc
              verify_dsc.doc

 Start | Echo | Send | Move | PAM User | Copy | Rename | Delete | Close
```

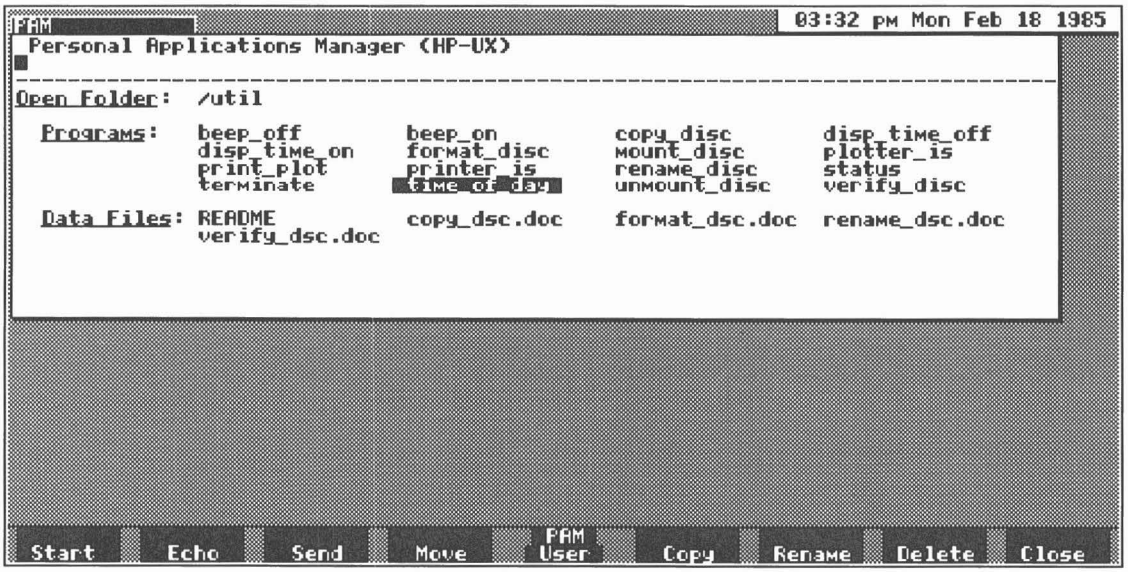
3. Highlight and start the time_of_day program.

Note that the name of the first program listed in the PAM window is highlighted. Press the arrow keys (in the lower-right corner of the keyboard) to highlight `time_of_day`.

Now find the function-key label **Start** in the lower-left corner of the screen. (This label appears in the PAM menu only when a program is highlighted.) Press function key (f1) to start the time_of_day program.

With a mouse, move the display pointer to `time_of_day` and press the left button on the mouse once to highlight `time_of_day`. Then press the left button a second time to start the time_of_day program.

PAM starts the time_of_day program in a window in the upper-right corner of the display:



The time_of_day program updates the displayed time every minute.

The time_of_day window is designed to remain visible without interfering with your handling of other windows. Because you never need to direct input to the time_of_day window, it doesn't take a turn as the active window when you shuffle through all the windows. This saves you from extra shuffling. You may encounter similar windows with some applications.

To stop the time_of_day program:

1. Select the time_of_day window.

   Because you can't select the time_of_day window by shuffling windows, you must use the display pointer. First move the display pointer to the time_of_day window, and then indicate your selection. (Detailed instructions for using the display pointer are on page 1-10.)

2. Press (Stop).

   This keystroke stops the time_of_day program and eliminates its window.

Starting Over

As you learn about your computer and try new things, you may get confused about where you are and what to do next. This is OK—it's important to experiment, and you can't hurt the computer by pressing keys. If you want to start over, press (Shift)(Reset). This keystroke stops all programs and eliminates all windows. If the tutor disc is in the drive, the tutor program will start automatically.

2 Running a Program

This chapter completes the basic skills you need for running applications. Like the previous chapter, this one describes steps in greater detail than later chapters.

Starting a Program

You've already started two programs, the tutor program and the time_of_day program. The tutor program is an *autostart* program: if you insert the disc and turn on the computer, the program starts automatically. Some of your applications may be autostart programs. If so, you can start them in the same way you started the tutor.

The time_of_day program, which you started in chapter 1, is not an autostart program. Most of your applications won't be autostart programs; you will start them in the same way you started the time_of_day program. This section begins with a review of the three steps you learned to start the time_of_day program.

To start a program:

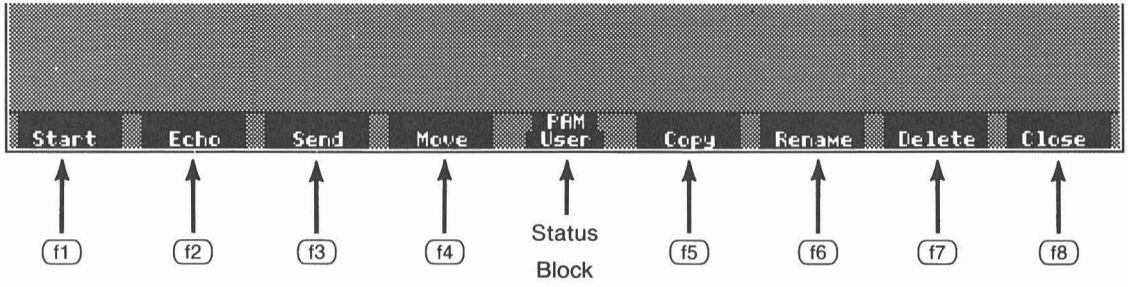
1. Select the PAM window.
2. Insert the disc containing the desired program.

   PAM updates its window to show the contents of the disc.
3. Highlight and start the application program.

   PAM starts the program in a new window, which appears in front of the PAM window. Usually the new window becomes the active window. (The time_of_day window is an exception.)

Controlling a Program

You can control many applications by simply executing commands from the *menu*. The menu appears across the bottom of the display. It contains *function-key labels*, which show the commands currently assigned to the function keys (f1) through (f8). In the center of the menu is the *status block*, which identifies the set of commands currently assigned to the function keys. For example:



You can execute a command by pressing the corresponding function key. In the example above, you would execute **Start** by pressing (f1).

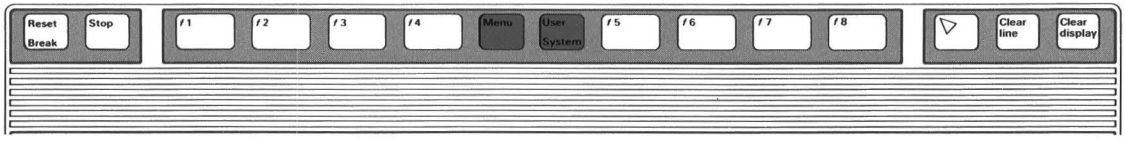
With a mouse, move the display pointer to the function-key label and press the left button on the mouse.

The status block has two parts that combine to identify the current menu. The upper part identifies the *active window* ("PAM" in the illustration above), and the lower part identifies the *active menu* ("User" in the illustration above).

- The active window is normally the one that appears in front of the other windows. It is always the window that receives the commands you give from the menu and that receives the characters you type from the keyboard. When you select a window, you're making it the active window. You can check that you selected the correct window by checking the status block.
- The active menu is normally the *User* menu, which contains commands to control the program. The commands in the User menu differ from program to program because each program has different commands. There is also a *System* menu, which contains commands to control the window. The commands in the System menu are similar for all windows.

Controlling the Menu

You can control the menu by pressing the (Menu) and (User/System) keys. They are located between function keys (f4) and (f5).



To turn the menu on or off: Press the (Menu) key.

With a mouse, press the right button.

To switch between the User menu and the System menu: Press the (User/System) key.

With a mouse, move the display pointer to the status block (in the center of the menu) and press the left button on the mouse.

Changing a Window Background

One of the commands on the System menu is **Invert**, which changes the color of the window background. You can choose whether a window has an amber background or a black background. This section gives detailed instructions on how to use **Invert** as an example of how to use the System menu. Other commands on the System menu appear in chapter 7, "Managing Several Programs at Once."

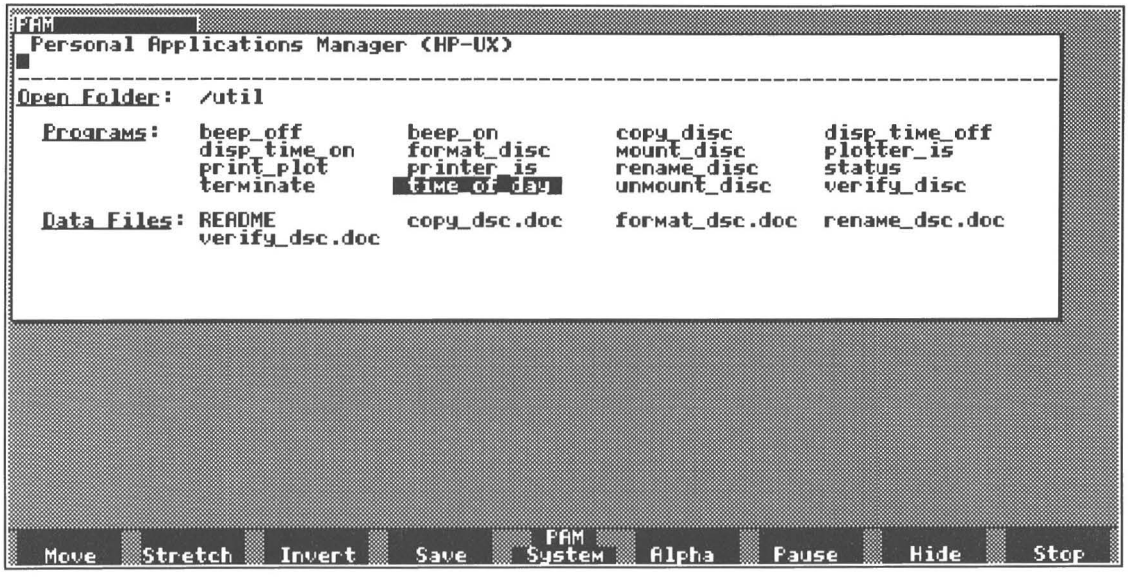
To change a window background:

1. Switch to the System menu.

   If the status block shows "User", press (User/System).

   With a mouse, move the display pointer to the status block (in the center of the menu) and press the left button on the mouse.

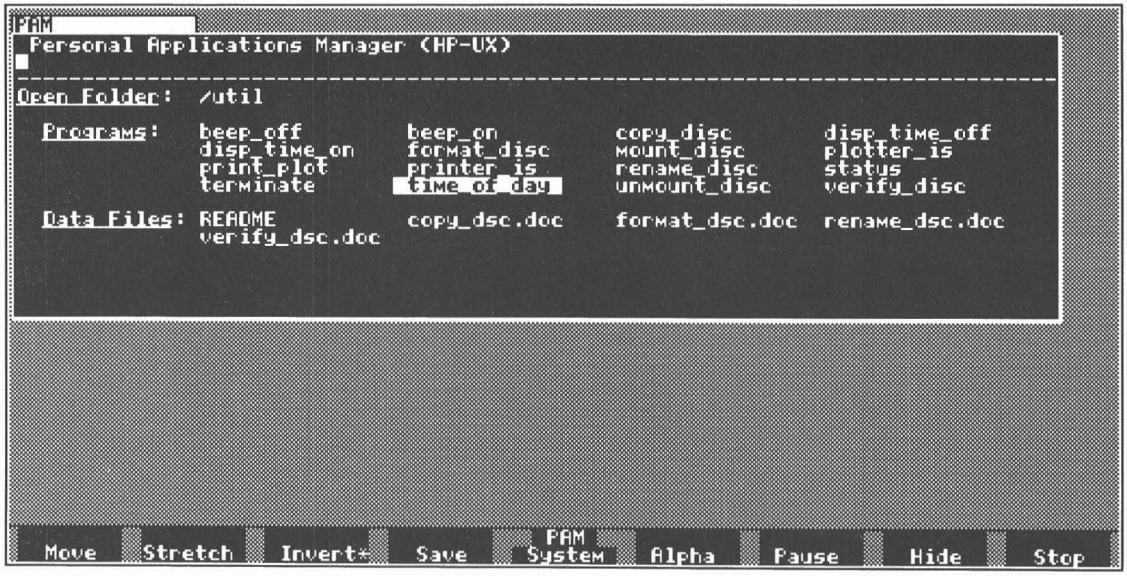
The display shows:


PAM
Personal Applications Manager (HP-UX)
Open Folder: /util
Programs: beep_off beep_on copy_disc disp_time_off
disp_time_on format_disc mount_disc plotter_is
print_plot printer_is rename_disc status
terminate time of day unmount_disc verify_disc
Data Files: README copy_dsc.doc format_dsc.doc rename_dsc.doc
verify_dsc.doc
Move Stretch Invert Save PAM System Alpha Pause Hide Stop

2. Press **Invert** (f3).

With a mouse, move the display pointer to **Invert** and press the left button on the mouse.

The display shows:


PAM
Personal Applications Manager (HP-UX)
Open Folder: /util
Programs: beep_off beep_on copy_disc disp_time_off
disp_time_on format_disc mount_disc plotter_is
print_plot printer_is rename_disc status
terminate time_of_day unmount_disc verify_disc
Data Files: README copy_dsc.doc format_dsc.doc rename_dsc.doc
verify_dsc.doc
Move Stretch Invert* Save PAM System Alpha Pause Hide Stop

Note that an asterisk appears in the **Invert** label (**Invert***). If you press **Invert** a second time, the window returns to its original appearance, and the asterisk disappears.

3. Switch back to the User menu.

   Press (User/System).

With a mouse, move the display pointer to the status block (in the center of the menu) and press the left button on the mouse.

The above example shows an inverted PAM window. If you start a program from an inverted PAM window, the new program window will also be inverted.

- For information about using the **Move**, **Stretch**, **Pause**, and **Hide** operations, refer to chapter 7, "Managing Several Programs at Once."
- For detailed information about the entire System menu, refer to chapter 2 in the comprehensive guide.

Stopping a Program

Many programs have commands in their User menu to save your data and stop the program. Refer to the documentation for each program. If a program has commands such as **Save**, **Quit**, or **Exit**, be sure to use these commands.

Some programs don't have commands in their User menu. If you need to save your data from such a program, refer to the documentation for the program. To stop such a program, make its window the active window and then press (Stop). (The steps you followed to stop the time_of_day program are on page 1-5.)

If pressing (Stop) doesn't stop the program, press (Shift)(Stop). Doing so risks losing the program data, so try (Stop) first.

Above all, remember that you don't need to stop one program to run another; refer to chapter 7, "Managing Several Programs at Once."

Updating PAM

Some applications can create new files. For example, a word processing program can create new text files, and a spreadsheet program can create new spreadsheet files. Unlike the files that PAM creates, these new files won't automatically appear in the PAM window. You can tell PAM to check for new files as follows.

To update PAM:

1. Select the PAM window.
2. Highlight the name of the open folder (upper-left corner of the PAM window).
3. Press **Reread** (f1).

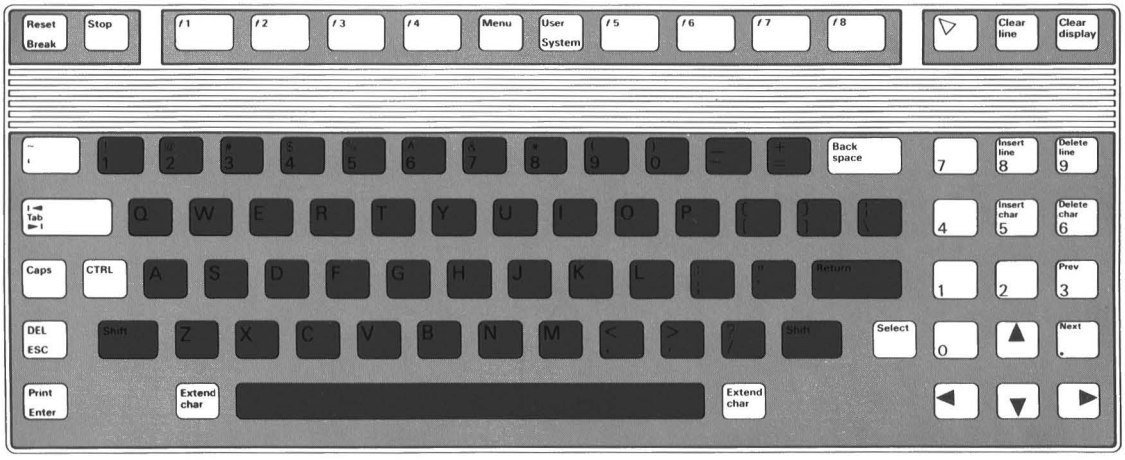
   PAM updates its window to include the new files.

3 Typing Your Information

When you're running an application such as word processing or a spreadsheet, you'll need to type information into the computer. This chapter tells you the basics about entering and editing that text. However, your application may give you additional capabilities or redefine some operations. Be sure to check the documentation for the application.

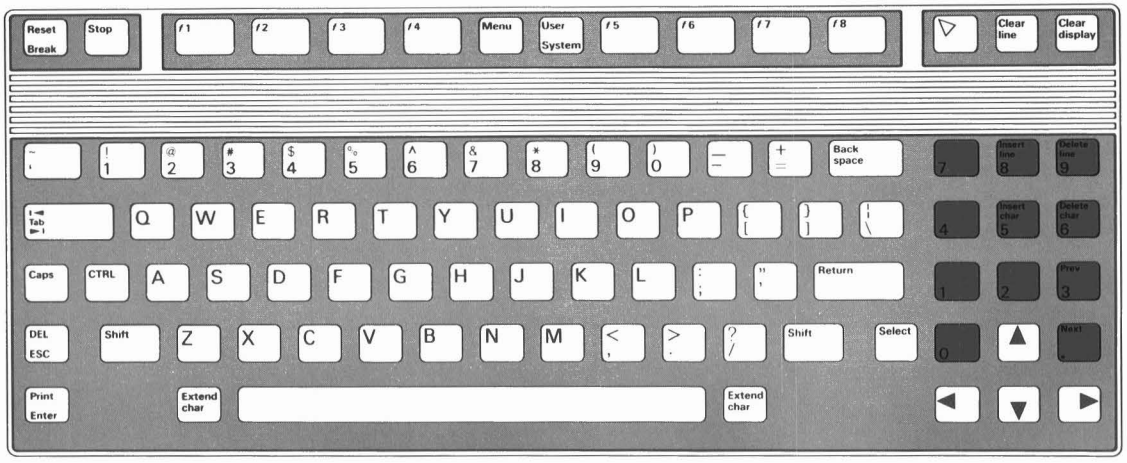
Entering Text

Most of the keys on the main keyboard are like those on a standard typewriter keyboard. You can type uppercase letters, lowercase letters, numbers, and symbols. Be sure to distinguish between the letter "l" and the number "1", and between the letter "O" and the number "0".



The Numeric Keypad

On the right end of the keyboard is the numeric keypad, with digits 0 through 9 and a decimal point. If you are accustomed to an adding machine or calculator, the numeric keypad lets you enter numbers quickly and accurately. The effect is identical to using the digit and period keys on the main keyboard.



Special Typing Keys

The following keys are also similar to typewriter keys. They modify the character keys or move the cursor.

Key	Operation
Shift	Modifies the letter keys to produce uppercase letters; modifies other keys to produce the symbol (or command) on the upper half of a key.
Caps	Reverses lowercase and uppercase letters on the letter keys. Pressing Caps once causes the letter keys to produce uppercase letters without Shift, and to produce lowercase letters with Shift. Pressing Caps a second time returns the letter keys' operation to normal.
Extend char	Modifies the character keys to produce characters not shown on the keyboard. A map showing the location of the hidden characters and a list of the entire Roman Extension character set appear as an appendix in the comprehensive guide.
Shift Caps	Reverses normal and extended characters. Pressing Shift Caps once causes the character keys to produce extended characters without Extend char, and to produce normal characters with Extend char. Pressing Shift Caps a second time returns the character keys' operation to normal.
Tab	Moves the cursor to the next tab stop.
Shift Tab	Moves the cursor to the previous tab stop.
Return	Terminates a line of text and moves the cursor to the left end of the next line.
Back space	Moves the cursor left one column and writes a space there.

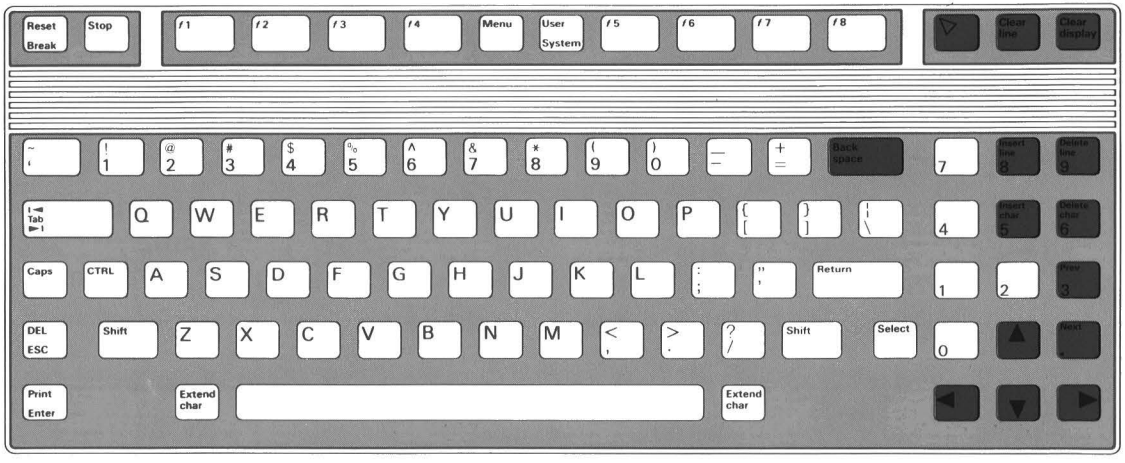
Editing Text

After you've typed in your text, you can review, add, modify, or delete the text. This section describes such editing operations.

When you're working on a text file or a spreadsheet, you may not be able to see all of the text at once. In the following diagram, "entire text" indicates the block of text maintained by the application, and "displayed text" is how much of the entire text you can see in the window at one time.

In the following descriptions, to *move the text* means to change which part of the text is displayed. Also, *current line* means the line containing the cursor.

Most of the editing operations listed below appear on the shifted numeric keypad.



Remember that an application can redefine any of these keys—be sure to read the application manual!

Editing Operations

Operation	Key	Description
Cursor right.	➤	Moves the cursor right one column.
Cursor left.	◄	Moves the cursor left one column.
Cursor up.	▲	Moves the cursor up one row.
Cursor down.	▼	Moves the cursor down one row.
Home up.	↖	Moves the cursor to the upper-left corner of the entire text.
Home down.	Shift ↖	Moves the cursor to the lower-left corner of the entire text.
Roll left.	Shift ◄	Moves the text left one column.
Roll right.	Shift ➤	Moves the text right one column.
Roll up.	Shift ▲	Moves the text up one row.
Roll down.	Shift ▼	Moves the text down one row.
Previous page.	Shift Prev	Moves the text down by the number of rows in the window.
Next page.	Shift Next	Moves the text up by the number of rows in the window.

Editing Operations (continued)

Operation	Key	Description
Back space.	Back space	Moves the cursor left one column and writes a space there.
Delete character.	Shift Delete char	Deletes the character at the cursor position and moves the remaining characters left one column.
Insert line.	Shift Insert line	Inserts a blank line, moving the current line and all subsequent lines down one row. The cursor moves to the left endend of the blank line.
Delete line.	Shift Delete line	Deletes the current line, moving all subsequent lines up one row. The cursor moves to the left end of the line that followed the deleted line.
Clear to line end.	Clear line	Clears text from the cursor to the end of the line.
Clear line.	Shift Clear line	Clears all text in the current line.
Clear to text end.	Clear display	Clears text from the cursor to the end of the entire text.
Clear text.	Shift Clear display	Clears the entire text.

Editing Operations (continued)

Operation	Key	Description
Insert character.	Shift Insert char	Switches between Replace Character mode and Insert Character mode. The default mode is Replace Character mode, where a new character replaces the existing character at the cursor position. Pressing Shift Insert char switches to Insert Character mode, where a new character is inserted at the cursor position, moving the existing characters right one column. Pressing Shift Insert char again switches back to Replace Character mode.

4 Viewing and Printing Your Information

This chapter describes how to display and print the contents of a *text file*, which is a data file whose data are words. You can also display and print the contents of other data files, such as spreadsheet data files, but the result would probably be unintelligible.

An example of a text file is the README file on the utilities disc. The README file describes the contents of the disc. The instructions for displaying and printing a text file use the README file as an example.

This chapter also describes how to print a copy of the display and contains some basic information about the built-in ThinkJet printer. For information about using peripheral printers, refer to the comprehensive guide.

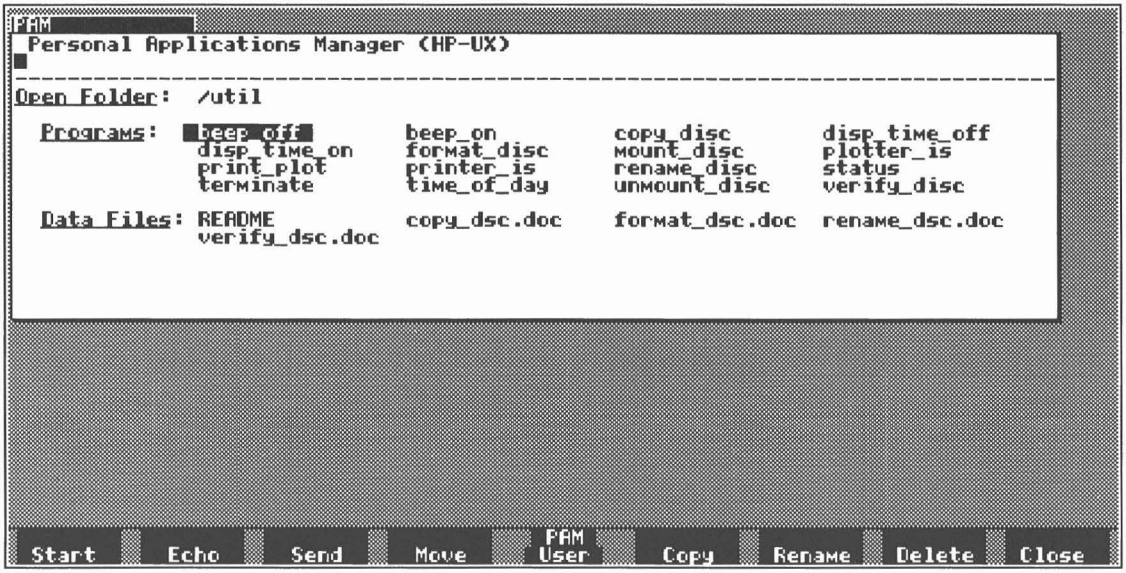
Viewing a Text File

If you want to follow the example that views a README file, insert the utilities disc now.

To view a text file:

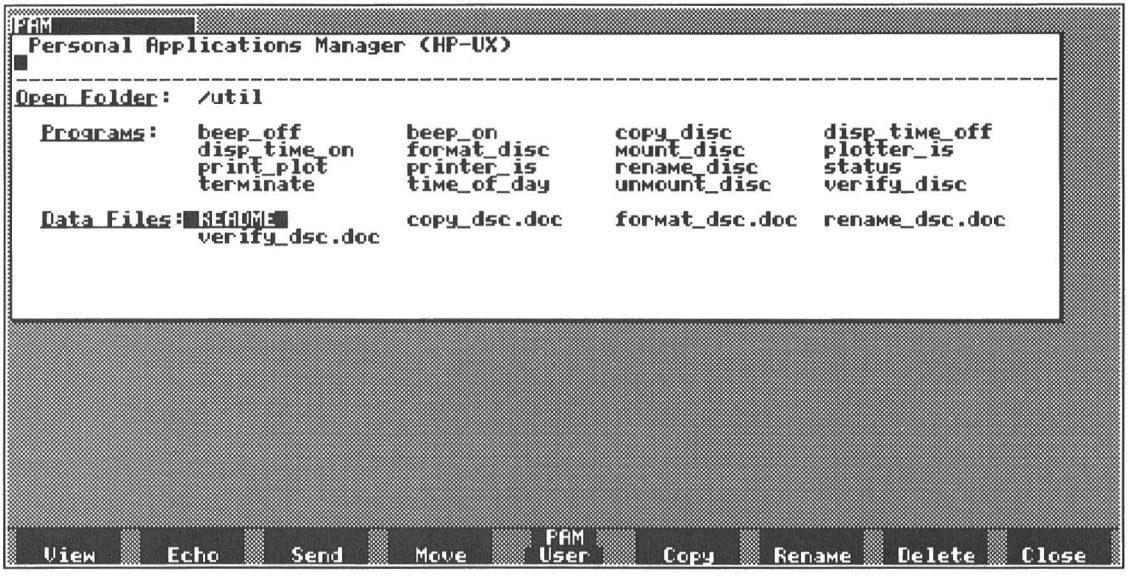
1. Select the PAM window.

   The display shows:



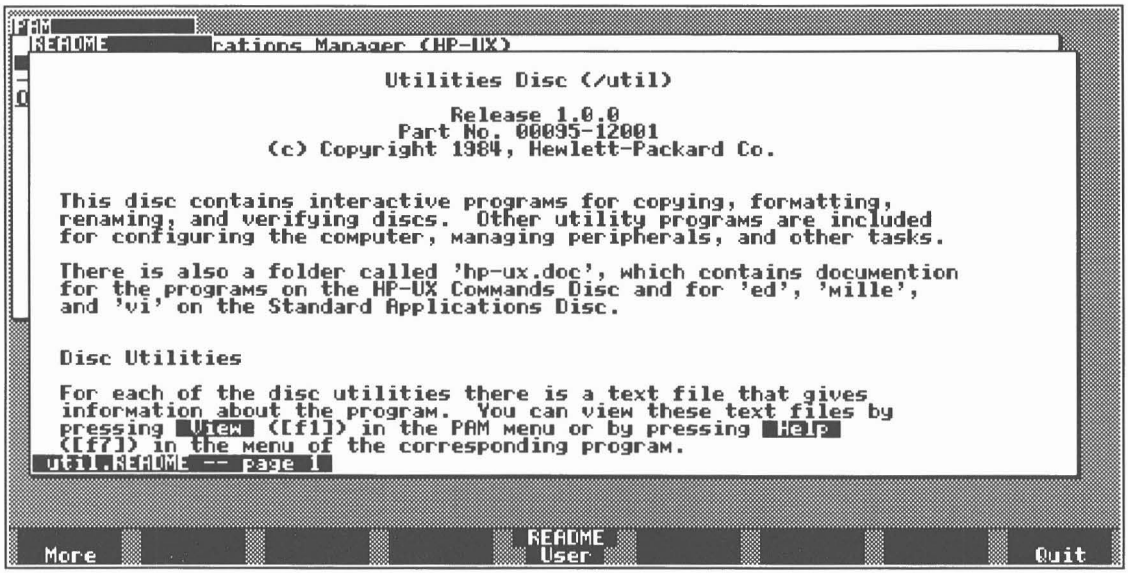
2. Highlight the name of the text file.

The display shows:

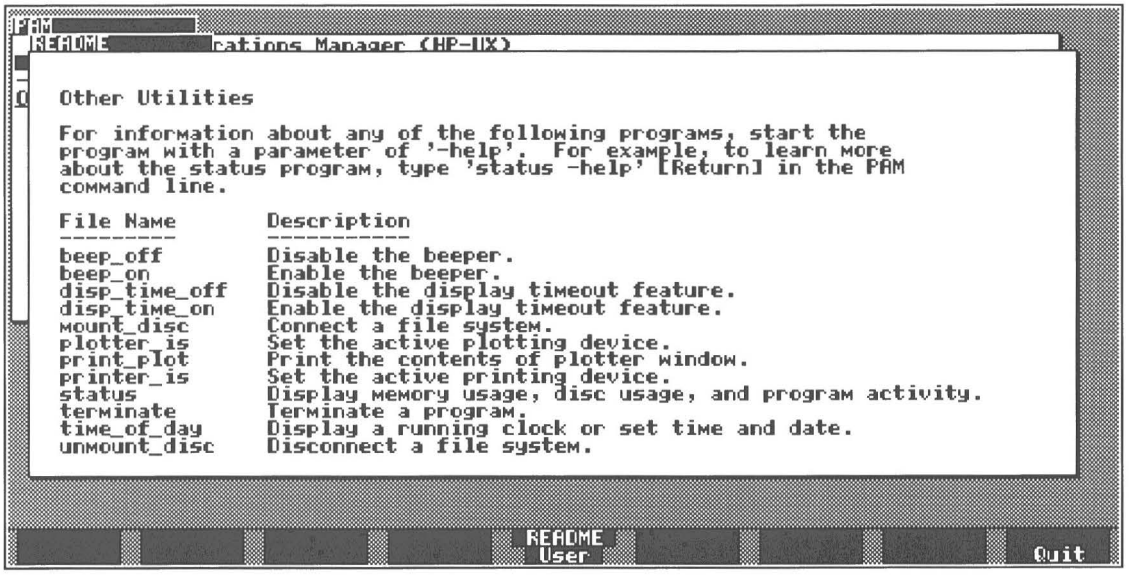


3. Press **View** (f1).

   PAM creates a new window with the same name as the text file, and then displays the first page of the text file.


PAM
README
cations Manager (HP-UX)
Utilities Disc (/util)
Release 1.0.0
Part No. 00095-12001
(c) Copyright 1984, Hewlett-Packard Co.
This disc contains interactive programs for copying, formatting, renaming, and verifying discs. Other utility programs are included for configuring the computer, managing peripherals, and other tasks.
There is also a folder called 'hp-ux.doc', which contains documention for the programs on the HP-UX Commands Disc and for 'ed', 'mille', and 'vi' on the Standard Applications Disc.
Disc Utilities
For each of the disc utilities there is a text file that gives information about the program. You can view these text files by pressing View ([f1]) in the PAM menu or by pressing Help ([f7]) in the menu of the corresponding program.
util.README -- page 1
More
README
User
Quit

4. Press **More** (f1) to show each succeeding page of the file. (**More** appears only if there is more text to display.)

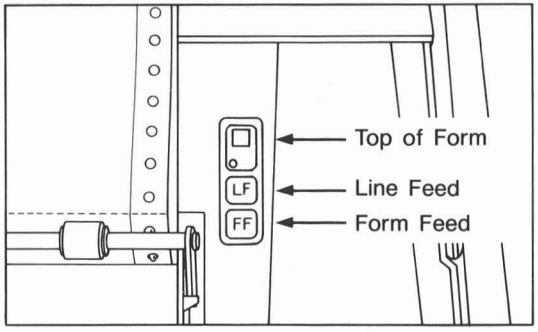


5. Press **Quit** (f8) to terminate the view command and eliminate the window.

Positioning the Paper

The setup guide shows you how to load paper into the printer. It also shows you how to set the *top of form*, which is the position of the first printed line on each page. If there is paper in the printer when you switch on the computer, the current position of the paper becomes the top of form.

You can control the movement of paper through the printer by pressing the buttons on the printer control panel. The panel is located on top of the computer, to the right of the printer:



To advance the paper by one dot: Press (LF) quickly.

To advance the paper by one line: Press (LF) firmly.

To advance the paper by several lines: Press and hold (LF). The paper advances one line, pauses, and then advances until you release the button.

To advance the paper to the next page: Press (FF).

If the printer runs out of paper, it stops printing and blinks the out-of-paper light on the control panel. You should load more paper, position the paper, and set top of form. (These steps are shown in the setup guide). The light then stops blinking and the printer resumes.

Printing a Copy of the Display

The built-in printer can make a copy of the contents of the display. (This capability is not available on peripheral printers.)

To print a copy of the display: Press (Shift)(Print).

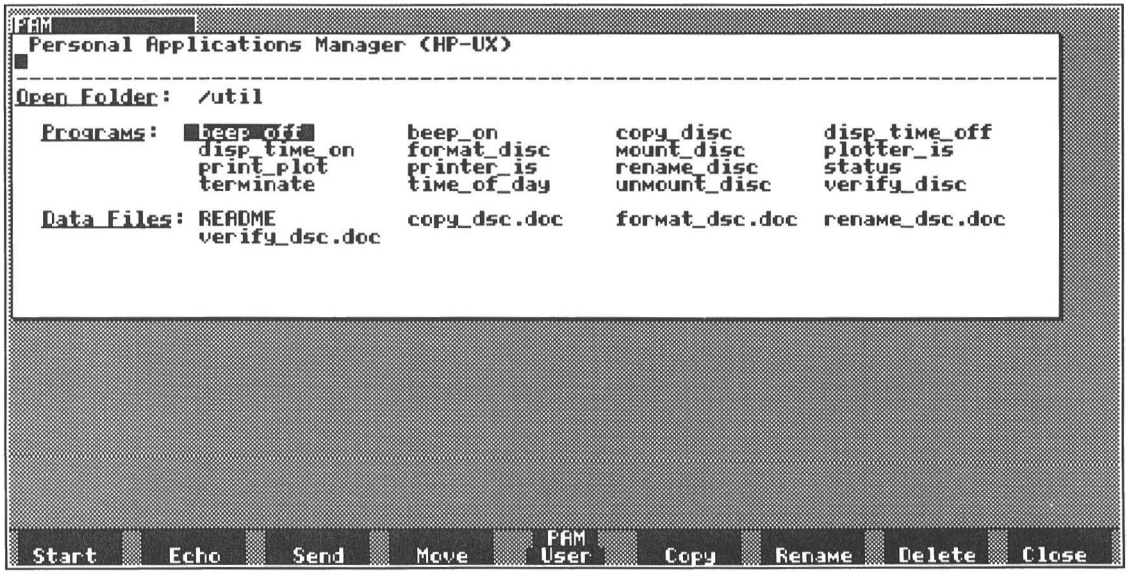
Printing a Text File

If you want to follow the example that prints a README file, insert the utilities disc now.

To print a text file:

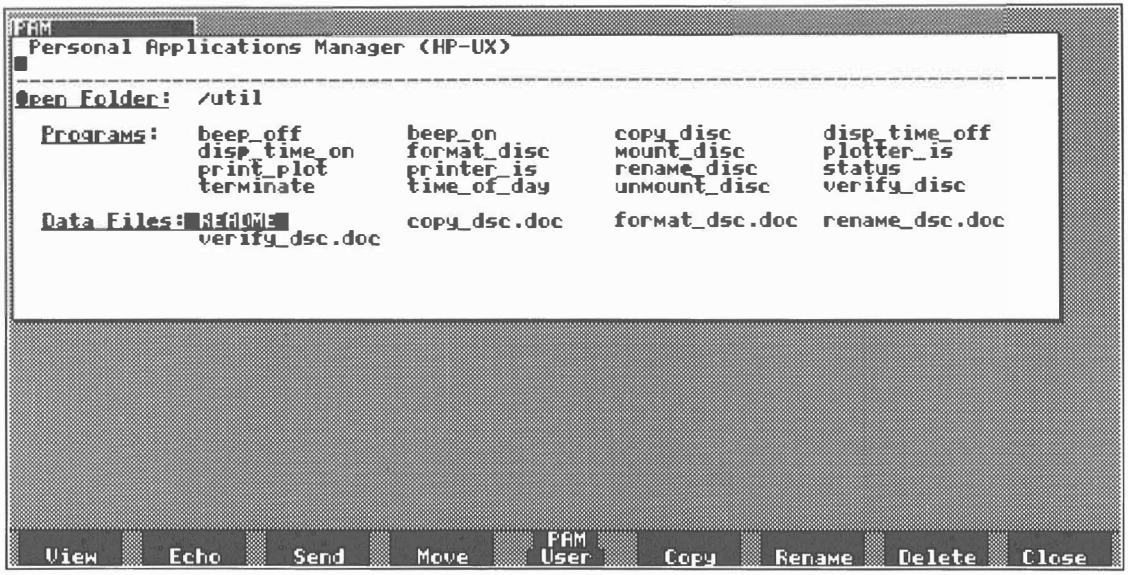
1. Select the PAM window.

   The display shows:


PAM
Personal Applications Manager (HP-UX)
Open Folder: /util
Programs: beep_off beep_on copy_disc disp_time_off
disp_time_on format_disc mount_disc plotter_is
print_plot printer_is rename_disc status
terminate time_of_day unmount_disc verify_disc
Data Files: README copy_dsc.doc format_dsc.doc rename_dsc.doc
verify_dsc.doc
Start Echo Send Move PAM User Copy Rename Delete Close

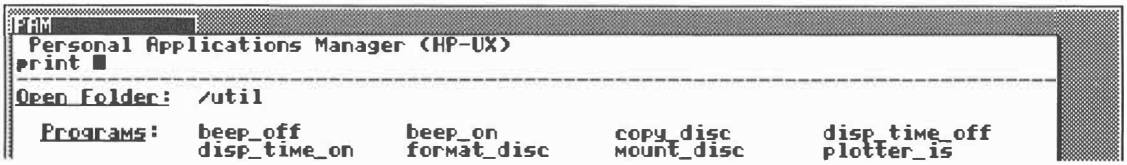
2. Highlight the name of the text file.

   The display shows:


PAM
Personal Applications Manager (HP-UX)
Open Folder: /util
Programs: beep_off beep_on copy_disc disp_time_off
disp_time_on format_disc mount_disc plotter_is
print_plot printer_is rename_disc status
terminate time_of_day unmount_disc verify_disc
Data Files: README copy_dsc.doc format_dsc.doc rename_dsc.doc
verify_dsc.doc
View Echo Send Move PAM User Copy Rename Delete Close

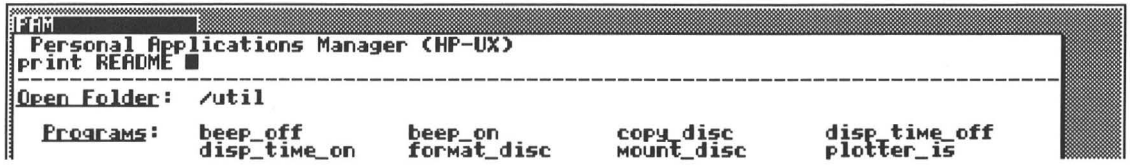
3. Type `print` followed by a space.

   The command line shows:



4. Press **Echo** (f2).

   This copies the name of the text file to the command line:



5. Press Return.

5 Protecting Your Information

There are a few rules you should follow to protect your information stored on discs. Following these rules prevents most problems and minimizes the damage if a problem does occur.

Protecting Your Discs From Damage

Observe the following precautions to protect the data on your discs:

- Always check that the red "drive busy" light is off before you eject a disc.
- Keep the disc away from magnetic fields, such as those generated by permanent magnets, transformers, motors, telephones, and television sets.

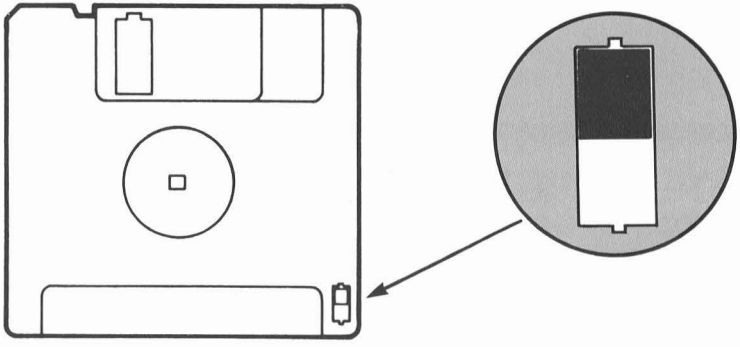
Observe the following precautions to protect your discs from physical damage:

- Make sure the metal shutter is closed. Never touch the magnetic surface of the disc.
- If the disc won't be used for an extended period, remove it from the computer.
- Store the disc away from contaminants such as dust, smoke, ashes, eraser crumbs, bread crumbs, and coffee.
- Do not expose the disc to temperatures below −40°C (−40°F) or above 60°C (140°F).
- Do not store the disc at temperatures below 10°C (50°F).

Protecting Your Discs From Accidental Changes

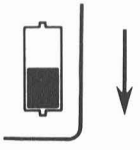
If you don't expect to change the files on a disc for a while, or have very important files on a disc, you can *write-protect* the disc. This allows you to read the files, but prevents you from changing the files or adding new files until you *write-enable* the disc again.

You write-protect or write-enable a disc by sliding its *write-protect tab*:



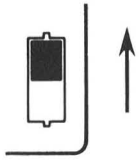
To write-protect a disc:

1. Locate the red write-protect tab on the back of the disc.
2. Slide the tab down (toward the corner) as illustrated. Make sure it snaps into place.
3. Turn the disc over and make sure the tab isn't visible through the hole in the corner.



To write-enable a disc:

1. Locate the red write-protect tab on the back of the disc.
2. Slide the tab up (away from the corner) as illustrated. Make sure it snaps into place.
3. Turn the disc over and make sure the tab blocks the hole in the corner.



Recognizing When a Disc Is Worn Out

A disc can eventually wear out from contact with the disc drive. On each disc the computer keeps a record of the wear on that disc. If the disc is approaching the end of its useful life, the computer warns you as follows.

If the computer clicks every second or so and blinks the red "drive busy" light, copy the disc to a new disc as soon as possible and discard the old disc.

If you continue to use the worn out disc, you risk losing the data on that disc, and the computer will eventually refuse to write data to the disc.

Making an Extra Copy of a Disc

Despite preventative measures, there is always a possibility of problems with your discs. For example, you might lose one! You can minimize the damage from any type of problem by making copies of your discs before the problem arises. Such extra copies are called *backup* discs.

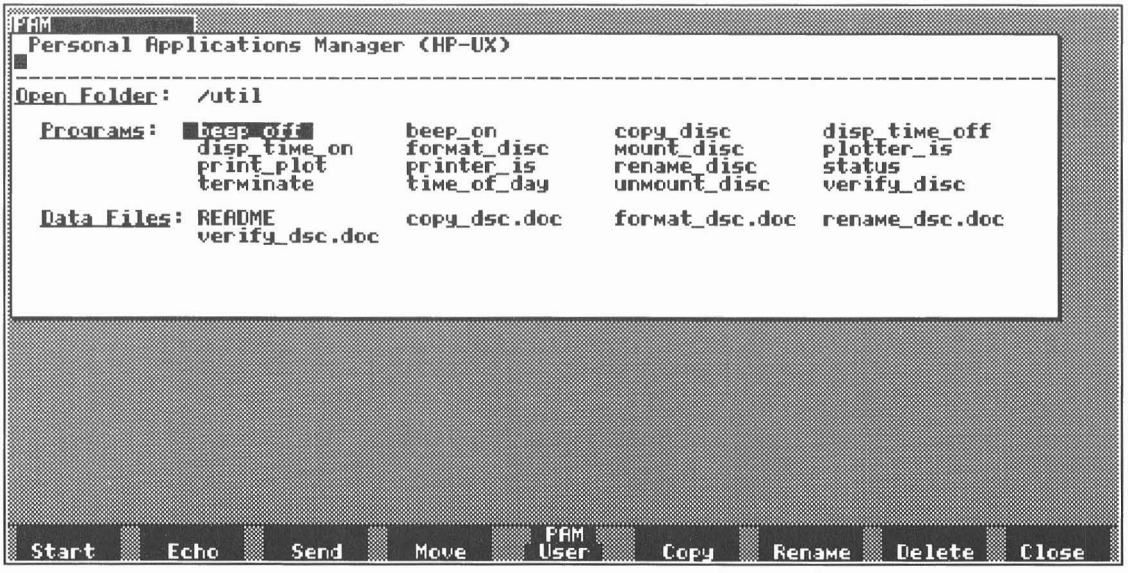
Preparing a New Disc

A new disc must be initialized and formatted before you can use it. If you've already prepared the disc, or if the disc already contains some files, you can skip ahead to "Using the copy_disc Program."

To prepare a new disc:

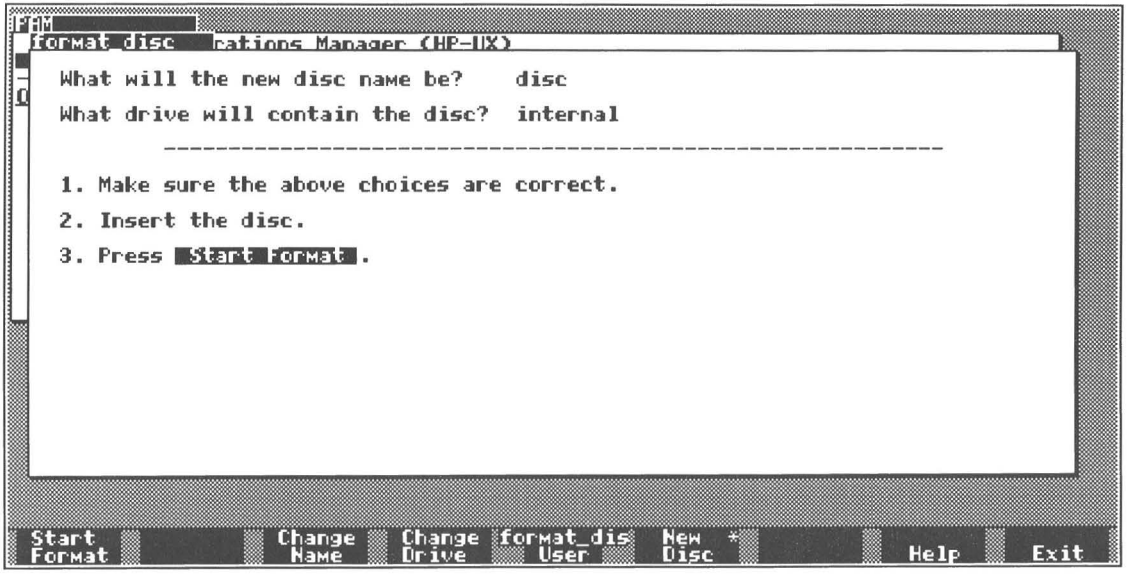
1. Select the PAM window.
2. Insert the utilities disc.

   PAM updates its window to show the contents of the utilities disc:



3. Highlight and start the format_disc program.

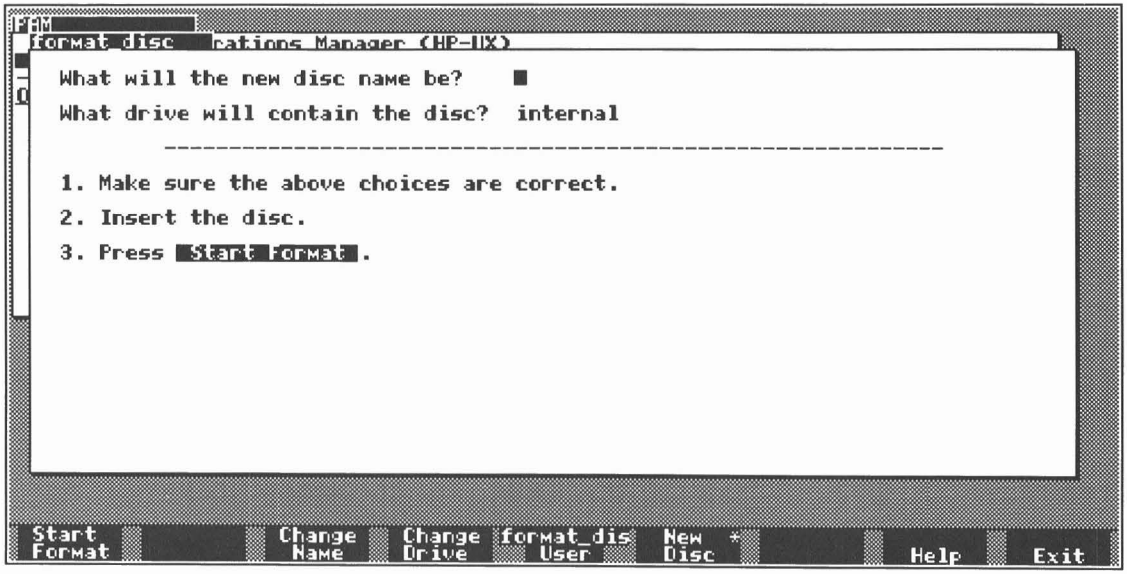
   PAM starts the format_disc program in a new window:



This message indicates that the program will format the disc inserted in the drive named "internal" (the built-in drive) and will name the formatted disc "disc". We'll assume that you want to use the internal drive, and you want to name the disc something more descriptive than "disc".

4. Press **Change Name** (f3).

   "disc" is replaced by a cursor:

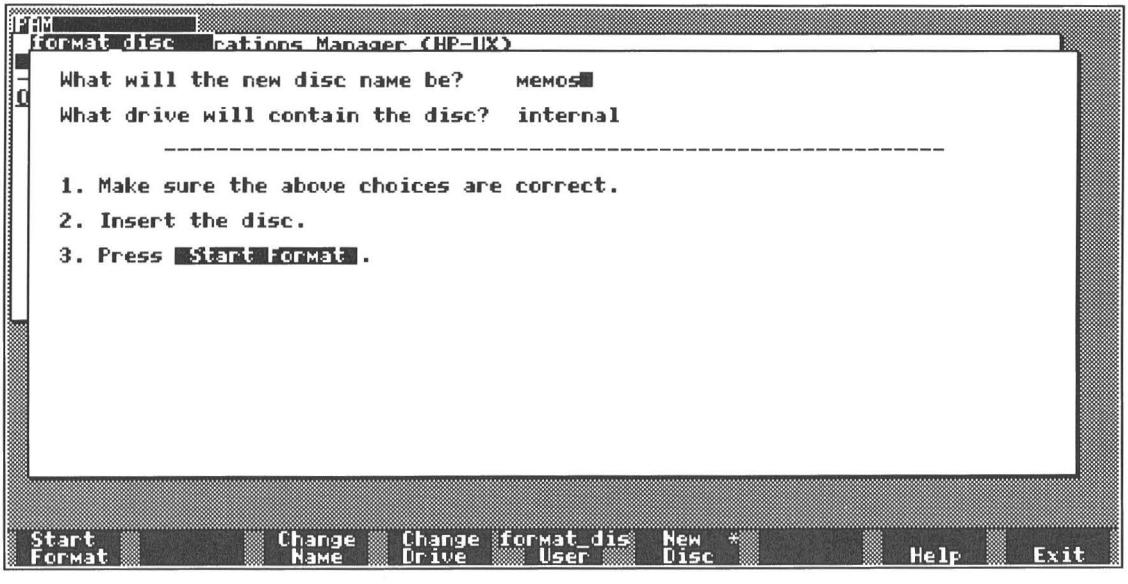


5. Type in the name you want.

   You can use up to six characters, including uppercase letters, lowercase letters, and digits. You can also use percent (%), dash (-), underscore (_), plus (+), comma (,), and period (.); but don't use these for the first character.

   If you make a typing error, use the Back space key to correct it.

Suppose you want to name the disc "memos":



6. Press (Return).

   The computer accepts your input and displays it as the specified name. Check that it is correct. If you made a typing mistake or change your mind, repeat steps 4, 5, and 6.

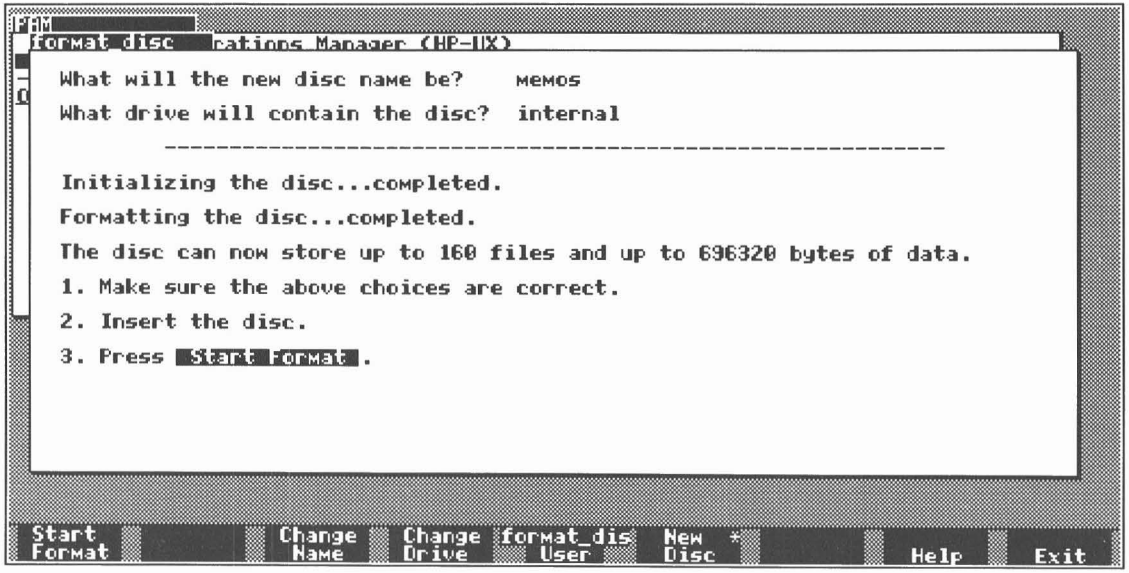
   (You can change the specified drive in the same way. Refer to the comprehensive guide for information about specifying peripheral devices.)

7. Insert the disc to be formatted.

Be sure that the disc in the drive is the disc you want to format. If you accidentally leave the utilities disc in the drive, you will erase all files on the utilities disc.

8. Press **Start Format** (f1).

   The program begins to format the disc. As it proceeds, it displays statistics about the formatted disc. When it is done, the display shows:


format_disc
What will the new disc name be? memos
What drive will contain the disc? internal
Initializing the disc...completed.
Formatting the disc...completed.
The disc can now store up to 160 files and up to 696320 bytes of data.
1. Make sure the above choices are correct.
2. Insert the disc.
3. Press Start Format.
Start Format
Change Name
Change Drive
format_dis User
New * Disc
Help
Exit

   If you want to format another disc, return to step 4.

9. Press **Exit** (f8).

Using the copy_disc Program

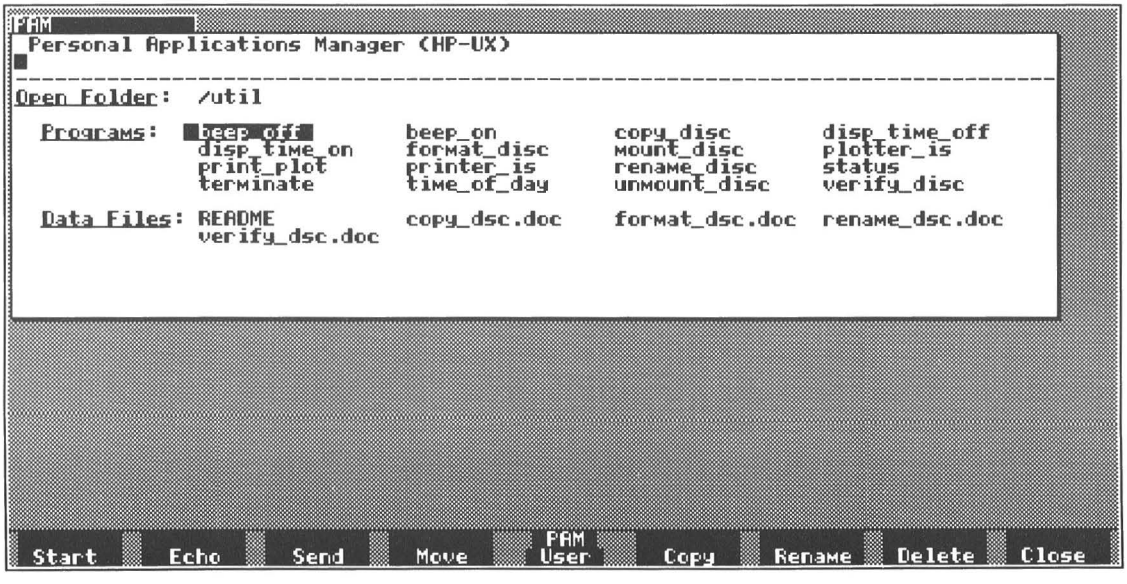
You should now have a disc ready to use for the backup copy. This disc can be an old disc with files on it (which will be erased), or a new disc that you have formatted. When you copy discs, the original disc to be copied is called the *source* disc, and the disc to become the backup disc is called the *destination* disc. The source and destination discs must be the same size and type of discs.

The copy_disc program works by copying from the source disc to computer memory, asking you to eject the source disc and insert the destination disc, and then copying from computer memory to the destination disc. When there's not enough memory to store the entire contents of a disc at once, the program repeats this procedure as many times as needed to copy the entire disc. You can minimize the number of times you swap the discs by maximizing the amount of computer memory available. To do so, stop any unneeded programs before starting the copy_disc program.

To copy a disc:

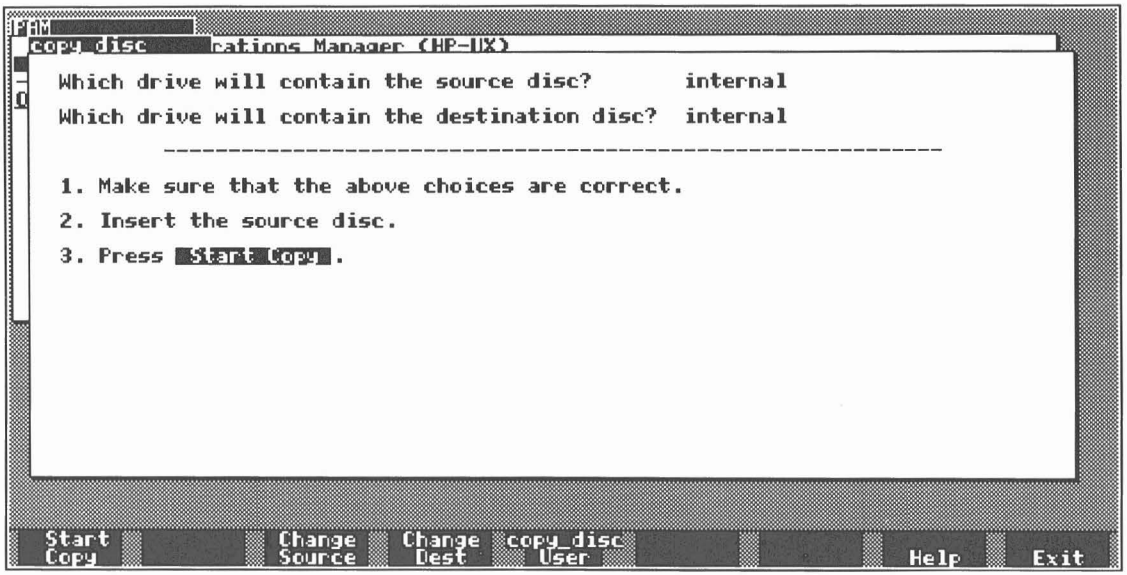
1. Make sure that the destination disc is write-enabled (the red tab blocks the hole in the corner of the disc).
2. Select the PAM window.
3. Insert the utilities disc.

   PAM updates its window to show the contents of the utilities disc:



4. Highlight and start the copy_disc program.

   PAM starts the copy_disc program in a new window:

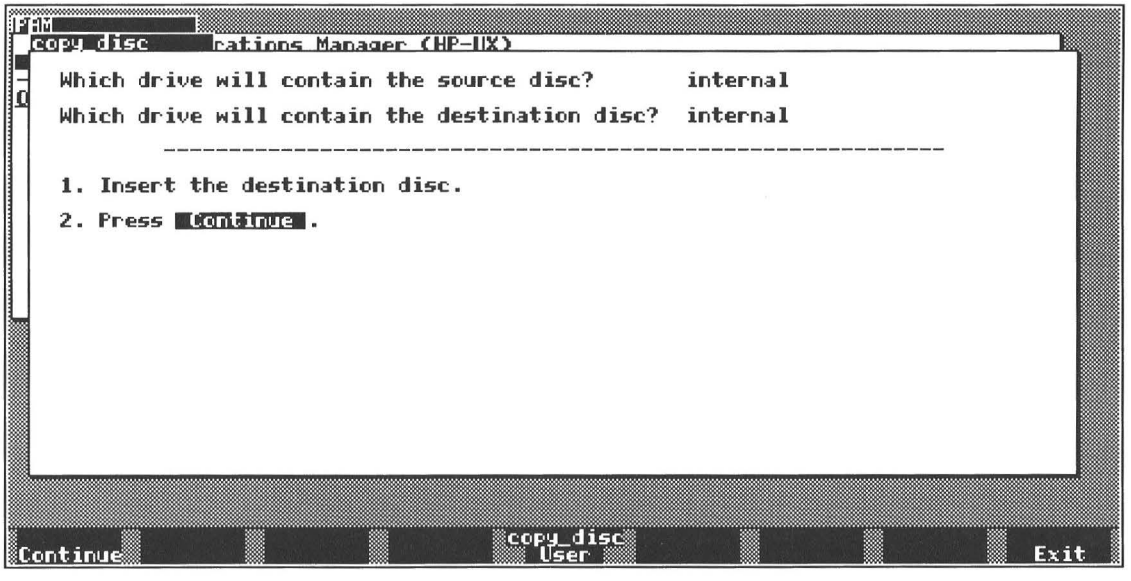


   This message indicates that the program will use the drive named "internal" (the built-in drive) for copying the disc. We'll assume that you do want to use the internal drive. (If you want to use a peripheral drive, you can change the specified drives in the same way you changed the specified name in the format_disc program. Refer to the comprehensive guide for information about specifying peripheral devices.)

5. Insert the source disc.

6. Press **Start Copy** (f1).

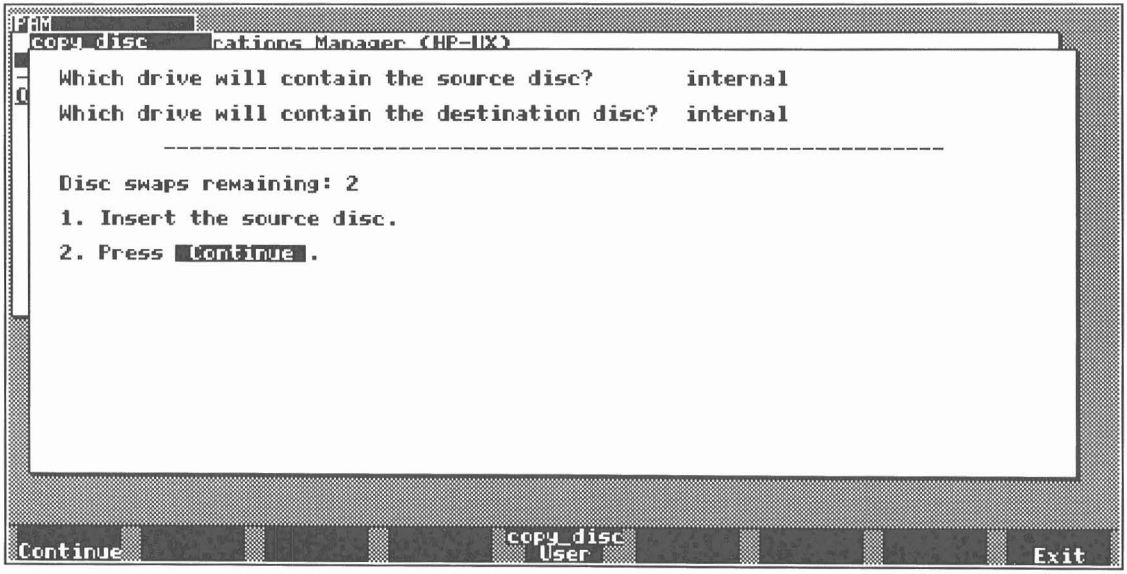
   The program checks how much computer memory is available, displays how many times you'll swap discs, and then copies from the source disc to computer memory. When there is no more room in memory, the program asks you to swap discs:



7. Eject the source disc and insert the destination disc.

8. Press **Continue** (f1).

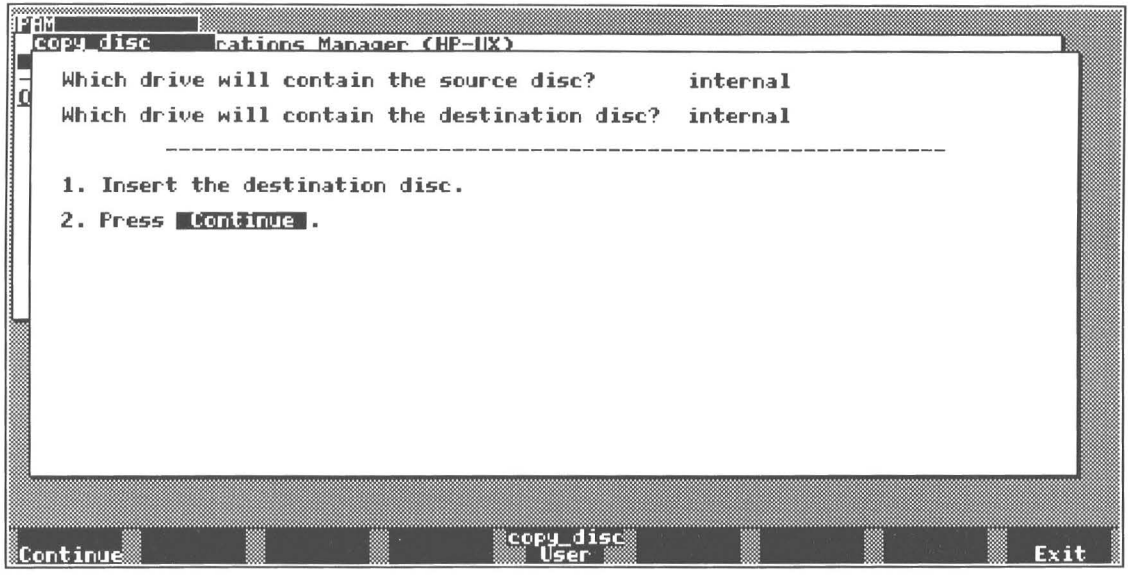
   The program copies from memory to the destination disc and asks you to swap discs again:



9. Eject the destination disc and insert the source disc.

10. Press **Continue** (f1).

    The program again copies from the source disc to memory. When there is no more room in memory, the program asks you to swap discs:

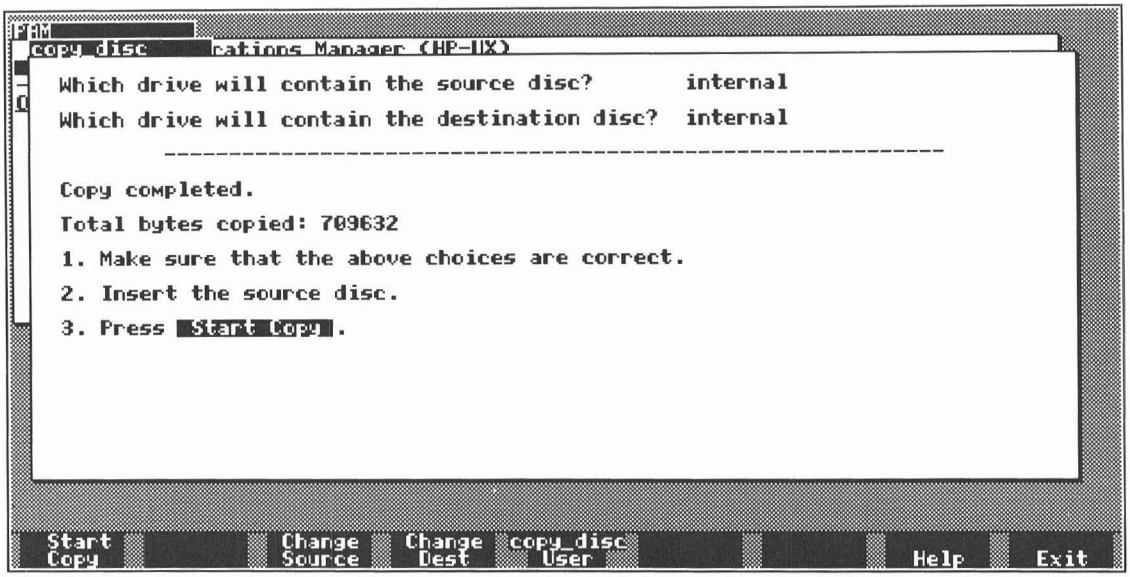


11. Eject the source disc and insert the destination disc.

12. Press **Continue** (f1).

    The program copies from memory to the destination disc. If there is more to copy from the source disc, the program again asks you to swap discs. In this case, return to step 9.

If the entire contents of the source disc have been copied, the display shows:



If you want to copy another disc, return to step 5.

13. Press **Exit** (f8).

We recommend that you write-protect the original disc, store it in a safe place, and use it only to make new copies.

Making an Extra Copy of a File

You can make an extra copy of a file for backup or with the intention of changing the new copy. Some examples:

- You have an important file on a disc that you don't want to write-protect. In this case you will make a copy of the file on a different disc, and the copy will have the same name as the original. You can then write-protect the disc containing the copy.

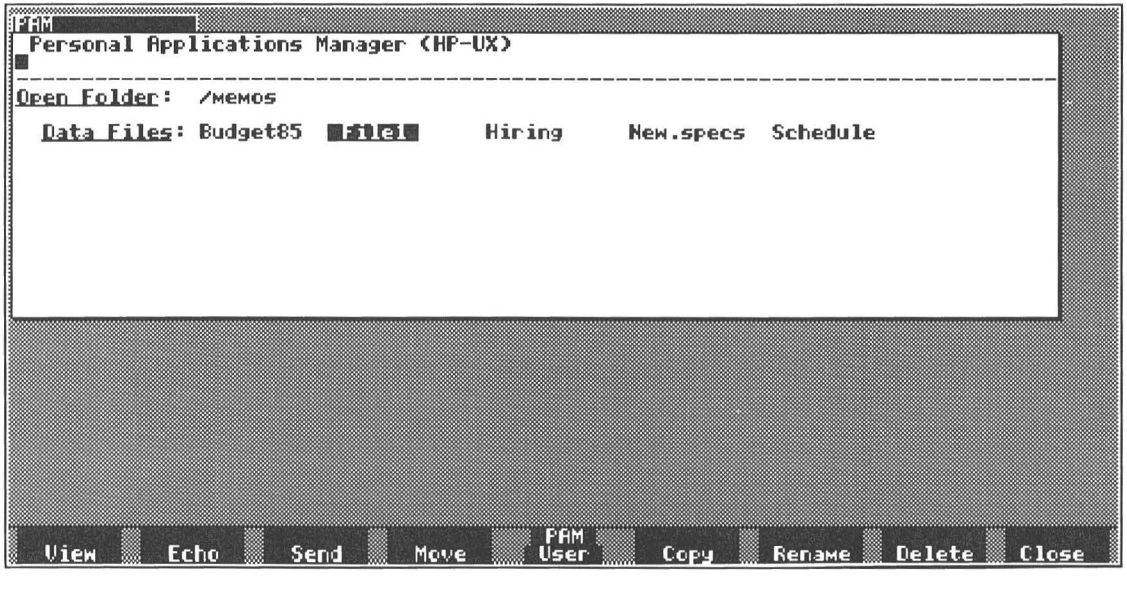
- You plan to edit a file, but you're not sure you'll like the result better than the original. In this case you will make a copy of the file on the same disc, and the copy will have a different name from the original. You can then change the original file, see how you like the result, and delete the version you don't like.

To make an extra copy of a file (on a different disc):

1. Select the PAM window.
2. Insert the disc containing the file to be copied.

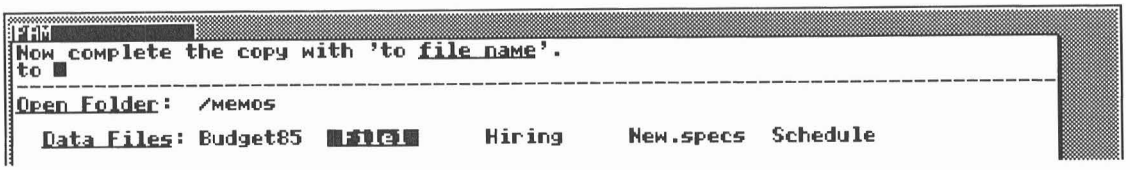
   PAM updates its window to show the contents of the disc you inserted.
3. Highlight the name of the file you want to copy.

   If you're copying "File1", the display shows:



4. Press **Copy** (f5).

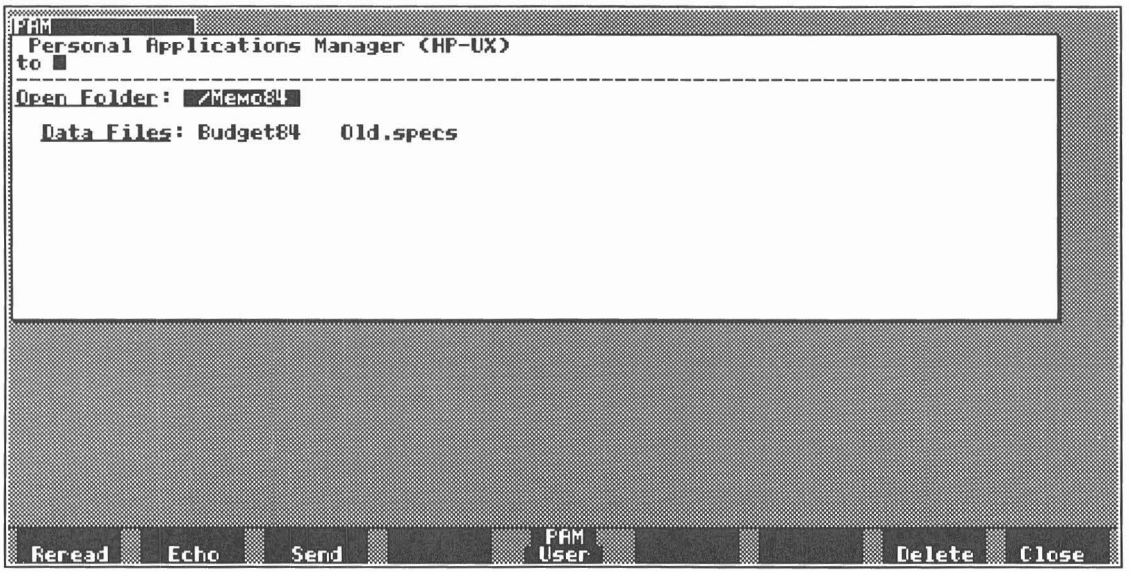
   PAM asks you to wait while it makes an internal copy of the file, and then displays:



5. Make sure that the *destination* disc, which will contain the new copy, is write-enabled (the red tab blocks the hole in the corner).
6. Remove the original disc and insert the destination disc.

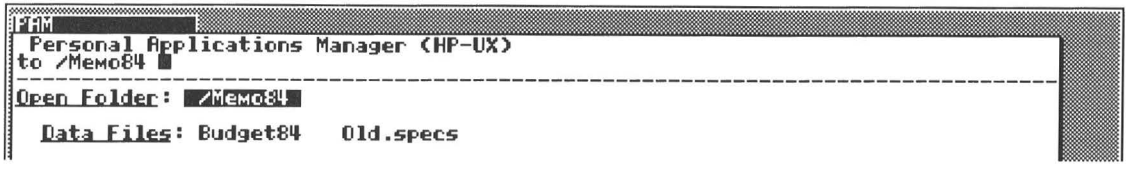
   PAM updates its window to show the contents of the destination disc.
7. Highlight the name of the open folder.

   If the disc's name is "Memo84", the display shows:



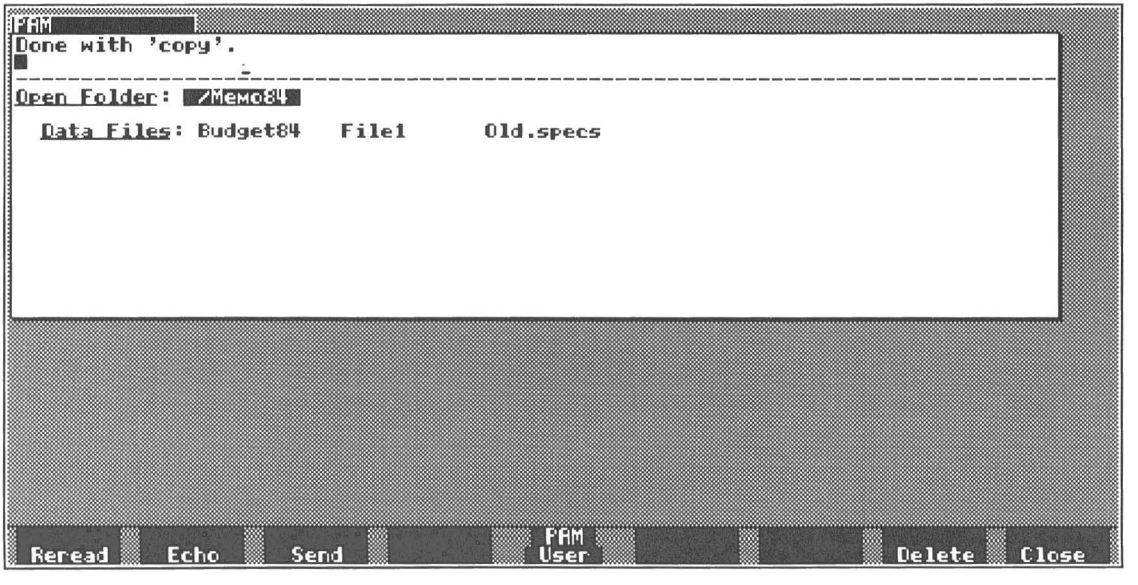
8. Press **Echo** (f2).

   This copies the name of the open folder to the command line:



9. Press Return.

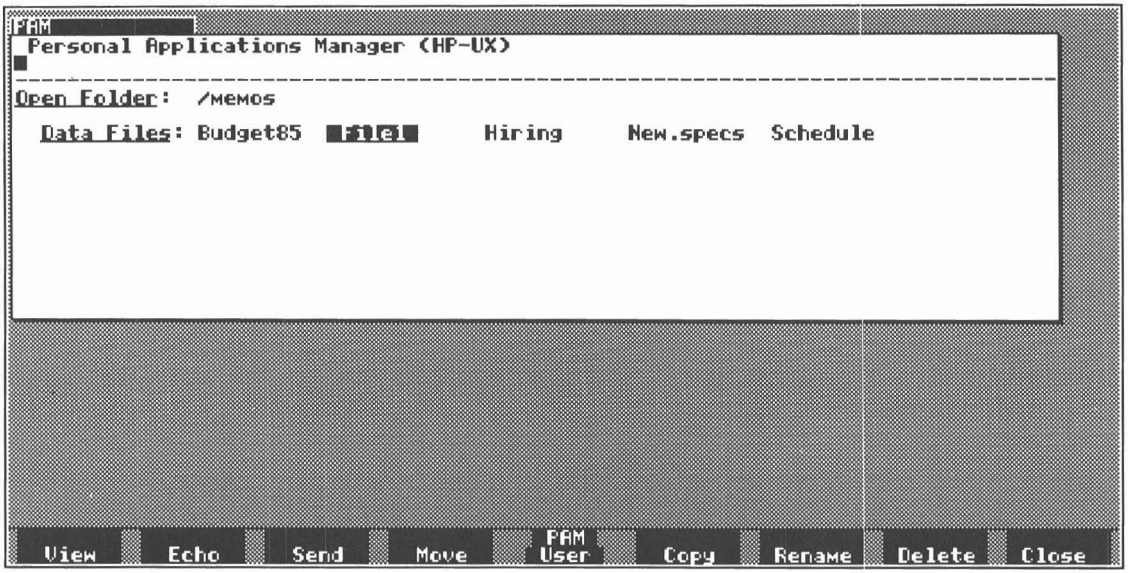
   PAM indicates when the copy has been completed, and then updates its window to include the new file in the contents of the destination disc:



To make an extra copy of a file (on the same disc):

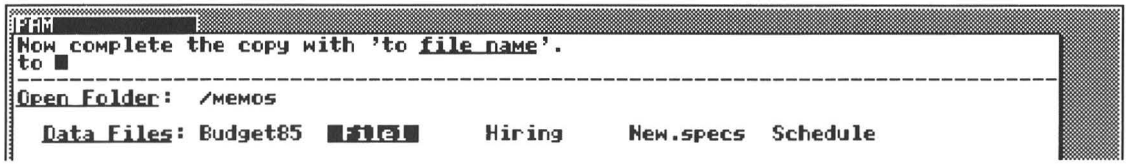
1. Select the PAM window.
2. Make sure that the disc is write-enabled (the red tab blocks the hole in the corner).
3. Insert the disc.

   PAM updates its window to show the contents of the disc you inserted.
4. Highlight the name of the file you want to copy. If you're copying "File1", your display shows:



5. Press **Copy** (f5).

   PAM asks you to wait while it makes an internal copy of the file, and then displays:

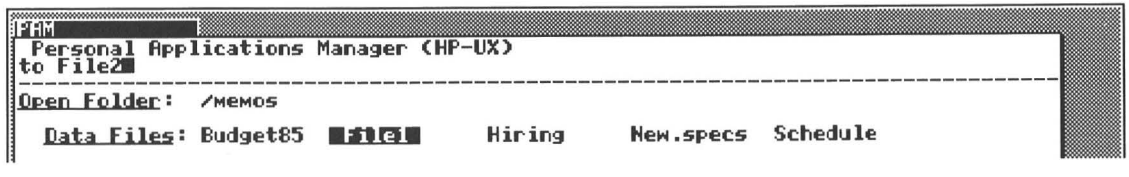


6. Type in the name you want. This name must be different from the original name.

   You can use up to 14 characters, including uppercase letters, lowercase letters, and digits. You can also use percent (%), dash (-), underscore (_), plus (+), comma (,), and period (.); but don't use these for the first character.

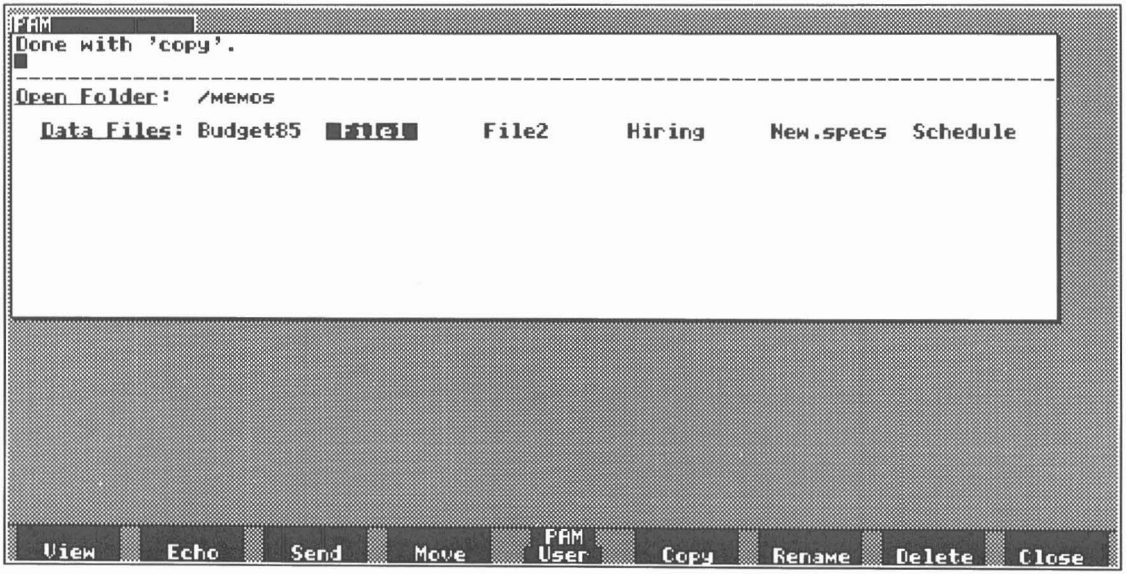
   If you make a typing error, use the (Back space) key to correct it.

   If the new file's name is "File2", the display shows:



7. Press (Return).

   PAM indicates when the copy has been completed, and then updates its window to include the new file in the open folder:

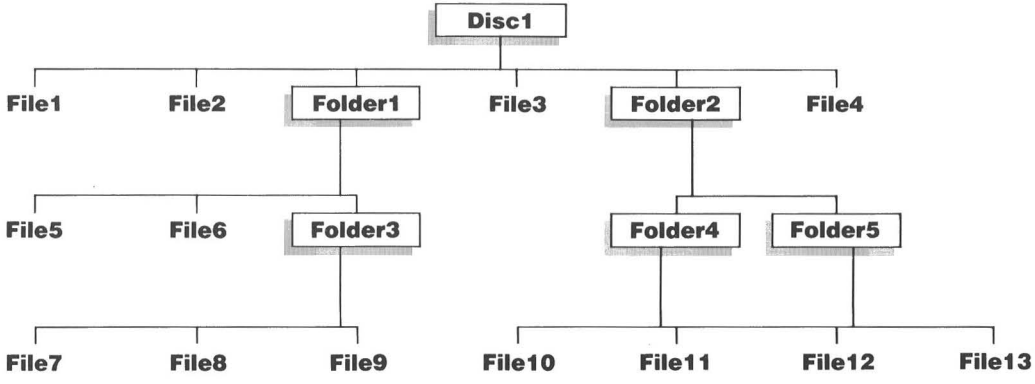


6 Organizing Your Information

This section describes ways you can organize your information. The organization of files on your discs is much like the organization of files in a file cabinet. Each disc is like a drawer in the file cabinet, containing one or more folders, and each folder contains one or more files. In this chapter, "file" means either a data file or a program.

Folders are powerful because they can contain other folders as well as files. This leads to a hierarchy of folders: you can store a file in a folder that is stored in another folder, which you can store in another folder, and so on.

You can use a folder to collect related files, or related folders, or related files and folders. The following diagram shows an example of a disc's file structure:



The PAM window shows the contents of one folder at a time. The table below lists each of the folders in the example above, along with the contents displayed in the PAM window when that folder is the open folder.

Folders and Contents

When the open folder is:	The displayed contents are:
Disc1	File1, File2, File3, File4, Folder1, Folder2
Folder1	File5, File6, Folder3
Folder2	Folder4, Folder5
Folder3	File7, File8, File9
Folder4	File10, File11
Folder5	File12, File13

The open folder is identified in the PAM window by an extended name called a *path name*. Each folder's path name defines a path from the disc to that folder. For example:

Disc1 is /Disc1.
Folder2 is /Disc1/Folder2.
Folder4 is /Disc1/Folder2/Folder4.

Files also have path names. A file's path name is simply the file name appended to the path name of the folder that contains the file. For example:

File10 is /Disc1/Folder2/Folder4/File10,
File11 is /Disc1/Folder2/Folder4/File11.

The slashes "/" are required delimiters in path names. A slash by itself identifies a folder called the *root*, which is the master folder. If each disc is like a file drawer, the root is like the whole file cabinet. A file's path name actually defines a path from the root to the file.

The instructions in this guide don't involve path names or the root, but you might encounter these terms in your applications. For more information about the file system, refer to the comprehensive guide.

Finding a File

Finding a file on a disc involves finding its folder, and this involves moving around in the file structure. You're at the outermost level when you first insert a disc. You can then move inward, opening folder after folder, until you find the file you want. Taking the illustration above as an example, suppose you wanted File9. You would first insert Disc1, then open Folder1, and then open Folder3. Once you've opened Folder3 you can easily access File9.

You can move between any two folders on the same disc by closing folders until you're back to the outermost level (the disc) and then opening folders until you reach the one you want. In the example above, this is how you move from Folder3 to Folder4: from Folder3 to Folder1 to Disc1, and then from Disc1 to Folder2 to Folder4.

But it's not always necessary to go all the way back to the outermost level. For example, you can move from Folder4 to Folder5 by moving from Folder4 to Folder2, and then from Folder2 to Folder5.

Opening a Folder

To open a folder and view its contents:

1. Select the PAM window.
2. Highlight the name of the desired folder.
3. Press **Open** (f1).

   PAM opens the folder and updates its window to show the contents of the folder.

Closing the Open Folder

To close the open folder:

1. Select the PAM window.
2. Press Close ((f8)).

PAM closes the folder and updates its window to show the contents of the next outer folder.

Renaming a File or Folder

You might want to change the name of a file in the following situations:

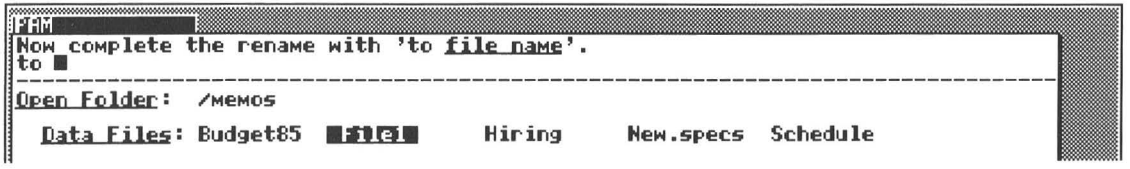
- An application has created a file with a default name like "workfile," and you want to give the file a meaningful name.
- You have a series of existing files that you want to name consistently, like "abc.memo1," "abc.memo2," and "abc.memo3."
- You want to move a file named "abc" to another folder, but there is already a file named "abc" in that folder. If you don't rename one of the files, the file "abc" that you move into the folder will replace the file "abc" already in the folder.

To rename a file or folder:

1. Select the PAM window.
2. Make sure the disc containing the file is write-enabled (the red tab blocks the hole in the corner).
3. Insert the disc.
4. Highlight the name of the file to be renamed.

5. Press **Rename** (f6).

   If you're renaming a file named "File1", the PAM window shows:

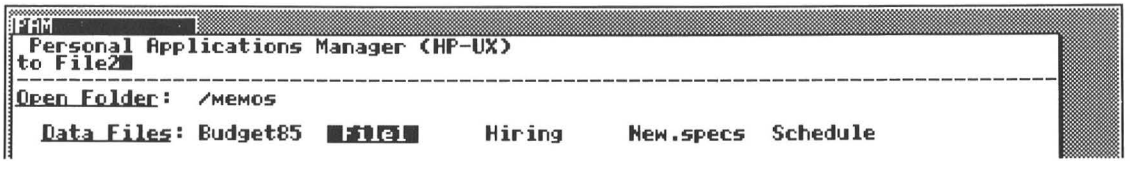


6. Type in the name you want.

   You can use up to 14 characters, including uppercase letters, lowercase letters, and digits. You can also use percent (%), dash (-), underscore (_), plus (+), comma (,), and period (.); but don't use these for the first character.

   If you make a typing error, use the Back space key to correct it.

   If you want the new name to be "File2", the PAM window shows:



7. Press Return.

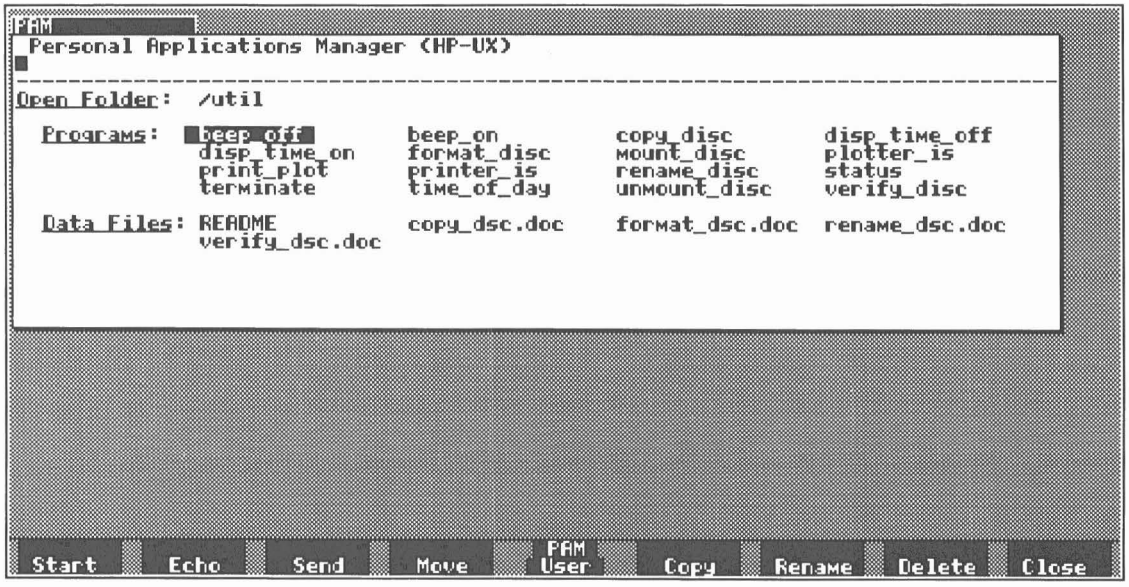
   PAM renames the file and updates its window to show the new name.

Renaming a Disc

To rename a disc:

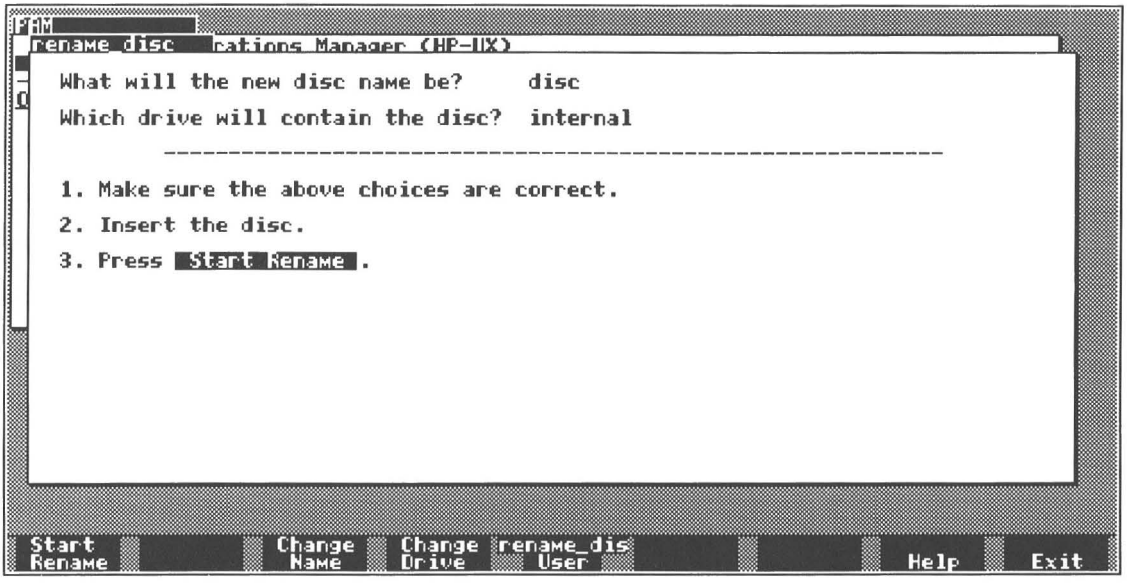
1. Select the PAM window.
2. Insert the utilities disc.

   PAM updates its window to show the contents of the utilities disc:



3. Highlight and start the rename_disc program.

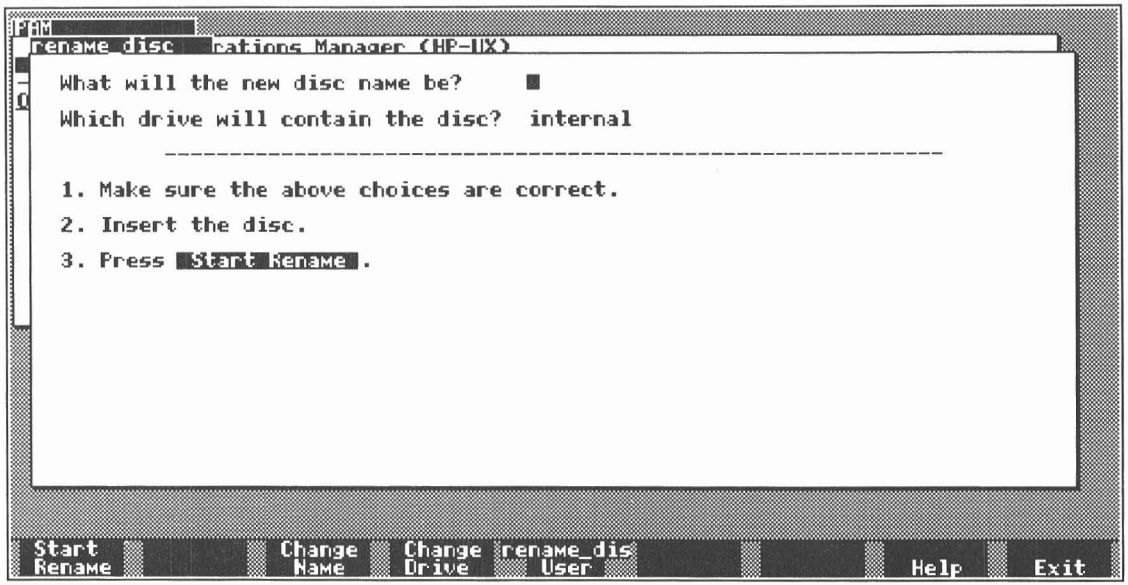
   PAM starts the rename_disc program in a new window:



This message indicates that the program will rename the disc inserted in the drive named "internal" (the built-in drive) and will rename the disc "disc". We'll assume that you want to use the internal drive, and you want to rename the disc something more descriptive than "disc".

4. Press **Change Name** (f3).

   "disc" is replaced by a cursor:

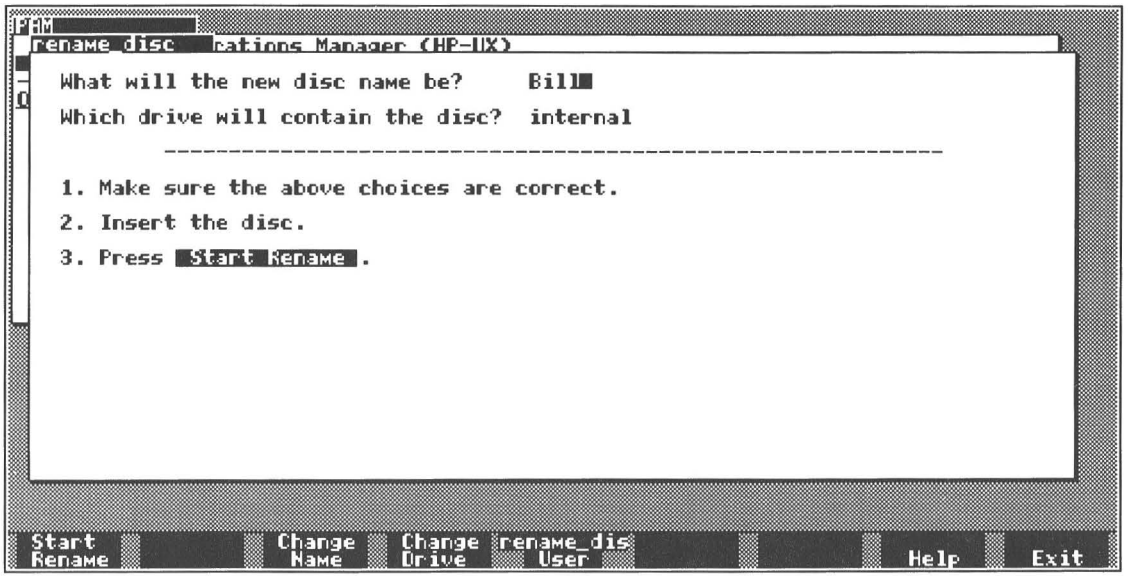


5. Type in the name you want.

   You can use up to six characters, including uppercase letters, lowercase letters, and digits. You can also use percent (%), dash (-), underscore (_), plus (+), comma (,), and period (.); but don't use these for the first character.

   If you make a typing error, use the Back space key to correct it.

Suppose you want to rename the disc "Bill":



6. Press (Return).

   The computer accepts your input and displays it as the specified name. Check that it is correct. If you made a typing mistake or change your mind, repeat steps 4, 5, and 6.

   (You can change the specified drive in the same way. Refer to the comprehensive guide for information about specifying peripheral devices.)

7. Make sure that the disc to be renamed is write-enabled (the red tab blocks the hole in the corner of the disc).

8. Insert the disc.

9. Press **Start Rename** ((f1)).

   The program renames the disc and indicates when it's done. If you want to rename another disc, return to step 4.

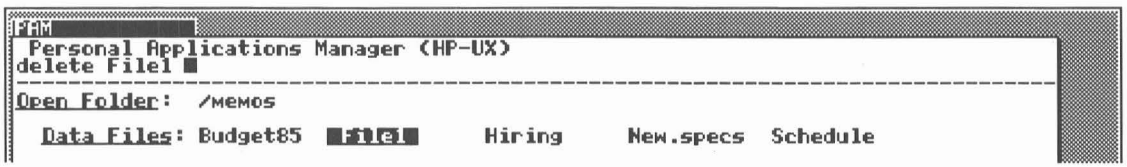
10. Press **Exit** ((f8)).

Deleting a File

To delete a file:

1. Select the PAM window.
2. Make sure the disc containing the file is write-enabled (the red tab blocks the hole in the corner).
3. Insert the disc.
4. Highlight the name of the file you want to delete.
5. Press Delete (f7).

   If you're deleting a file named "File1", the PAM window shows:



6. Press Return.

   PAM deletes the file and updates the PAM window.

Deleting a Folder

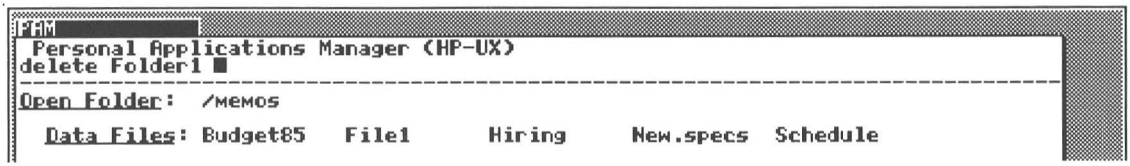
To delete a folder:

1. Select the PAM window.
2. Make sure the disc containing the folder is write-enabled (the red tab blocks the hole in the corner).
3. Insert the disc.
4. Open the folder that you want to delete.
5. Delete or move any files in the folder.

   (Instructions for moving a file appear on page 6-13.)
6. Close the empty folder.

   PAM displays the contents of the next outer folder, which includes the empty folder to be deleted.
7. Highlight the name of the folder to be deleted.
8. Press **Delete** (f7).

   If you're deleting a folder named "Folder1", the PAM window shows:



9. Press Return.

   PAM deletes the empty folder and updates the PAM window.

Collecting Files Into a Folder

Folders help you organize your files by grouping them together. Suppose you're working on three projects, and you've created several spreadsheet files for each project. First create three folders, one for each project. Then move the files for each project into the folder for that project. If you later need another file for one of the projects, create the new file within the proper folder.

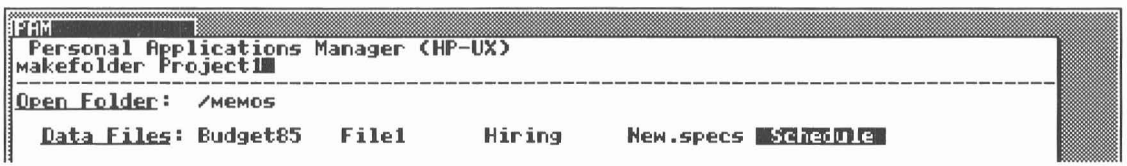
Creating a New Folder

To create a new folder:

1. Select the PAM window.
2. Make sure the disc to contain the new folder is write-enabled (the red tab blocks the hole in the corner).
3. Insert the disc.
4. Open the folder to contain the new folder.
5. Type `makefolder` followed by a space.
6. Type in the name you want.

   You can use up to 14 characters, including uppercase letters, lowercase letters, and digits. You can also use percent (%), dash (-), underscore (_), plus (+), comma (,), and period (.); but don't use these for the first character.

   If you're naming the new folder "Project1", the PAM window shows:



7. Press Return.

   PAM creates the folder and updates the PAM window to show the new folder.

Moving a File or Folder

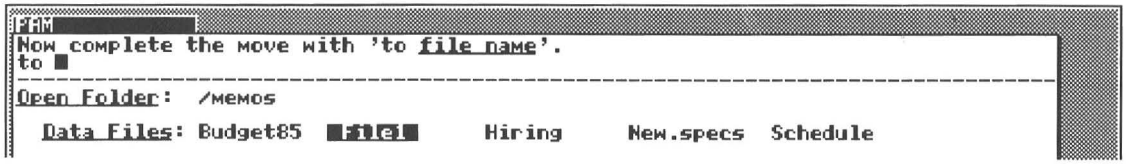
You can move a file to any folder on the same disc. You can also move a folder, provided that you don't introduce circularity. (You can't move Folder1 to Folder2 if Folder 1 contains Folder2.)

To simplify the instructions, we assume that you're moving a file. The procedure for moving a folder is identical.

To move a file or folder:

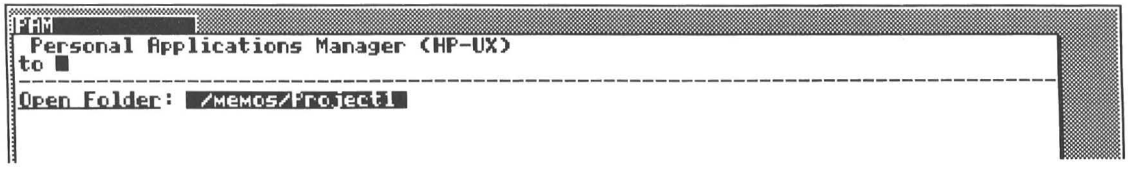
1. Select the PAM window.
2. Make sure the disc containing the file is write-enabled (the red tab blocks the hole in the corner).
3. Insert the disc.
4. Open the folder containing the file to be moved.
5. Highlight the name of the file to be moved.
6. Press **Move** (f4).

   If you're moving a file named "File1", the PAM window shows:



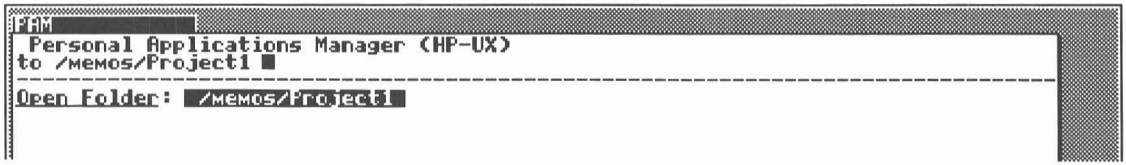
7. Open the folder to which you want to move the file.
8. Highlight the name of the open folder.

   If you're moving File1 to Project1, the PAM window shows:



9. Press **Echo** (f2).

   This copies the highlighted name of the open folder to the command line:



10. Press Return.

    PAM indicates when the move is complete and updates the PAM window to show the file moved into the folder.

Collecting Files Onto One Disc

You can minimize how often you remove and insert discs by collecting the files you use most onto one disc which is called a *working disc*. In this case you're grouping your files by usage rather than by topic.

To collect files onto one disc:

1. If you have a brand new disc, prepare it according to the instructions on page 5-4.
2. Create the desired folders.

   Plan the arrangement of folders by drawing a diagram similar to the one on page 6-1. Then create the folders, starting with the outermost folder, according to the instructions on page 6-12.
3. Copy your existing files into the new folders, following the instructions on page 5-15.

7 Managing Several Programs at Once

Your computer is *multi-tasking*, which means you can give it several tasks to perform at the same time. The computer divides its resources among the various programs that are running. You can start tasks that don't require your participation, such printing a file or sending a file to a remote computer, and then start an interactive program. This chapter tells how you can keep track of several programs running at once.

The commands used in this chapter are found on the System menu. If you don't remember how to switch to the System menu, refer to page 2-4.

Moving and Stretching a Window

You can control the placement and size of your windows by moving and stretching them. For example, you might want to compare the contents of overlapping windows, or monitor the output from two programs. You could see both windows at once by reducing their size and then offsetting them.

To move a window:

1. Select the window you want to move.
2. Switch to the System menu.
3. Press **Move** (f1).

   The display pointer becomes a right-angle marker at the upper-left corner of the window.

4. Move the display pointer to the desired location.
5. Press (Select).

   The window moves to the indicated position, and the display pointer reappears at its previous position.
6. Switch back to the User menu.

To stretch a window:

1. Select the window you want to stretch.
2. Switch to the System menu.
3. Press **Stretch** ((f2)).

   The display pointer becomes a right-angle marker at the lower-right corner of the window.
4. Move the display pointer to the desired location.
5. Press (Select).

   The window grows or shrinks to stretch from its previous upper-left corner to the indicated lower-right corner, and the display pointer reappears in its previous location.
6. Switch back to the User menu.

Hiding and Showing a Window

If you have several programs running, you might not want all the windows displayed. Suppose you're shuffling back and forth between two windows, and you have to shuffle several windows each time you want to select the other window. You can hide the windows that you don't want, without affecting the programs running in those windows.

To hide a window:

1. Select the window you want to hide.
2. Switch to the System menu.
3. Press Hide (f7).

   The window disappears except for its banner, which is placed in the lower-left corner of the display.
4. Switch back to the User menu.

To show a hidden window:

1. Move the display pointer to the banner of the window you want to show.

   If there are windows covering the lower-left corner of the display, move or hide those windows until you can find the desired banner.
2. Press (Select).

   The window reappears as the active window.

Suspending and Resuming a Window

If you want to hide a window for a while, but you don't want to miss any output from the program running in the window, you can prevent the program from sending output to its window. Doing so is called *suspending* the window. The program will keep running until it would normally display output in the window. If the program accumulates too much undisplayed output, it will stop running until you resume the window.

To suspend a window:

1. Select the window of the program you want to suspend.
2. Switch to the System menu.
3. Press Pause (f6).

   All activity in the window stops (although the program is probably still running). Note that an asterisk appears in the Pause label (Pause*).
4. Switch back to the User menu.

To resume a suspended window:

1. Select the window you want to resume.
2. Switch to the System menu.
3. Press Pause (f6).

   The asterisk in the Pause label disappears, and the program resumes output to its window.
4. Switch back to the User menu.

A Caring For the Computer

Traveling with the Computer

Traveling by air? If you take your computer on an airplane, remove the print head and carry it separately in a plastic bag. The reduced pressure in an airplane can cause the print head to leak.

Do not check the computer as baggage! If you can't carry the computer with you in the plane, you must pack it for shipping.

Shipping the computer? Remember to insert the dummy disc in the drive, and be sure to use the original packing carton for your computer. If you've lost the original packing carton, contact your Hewlett-Packard dealer.

Traveling internationally? You may need a different power cord to use your computer in another country. Be sure to use only the power cord specified by Hewlett-Packard. If you change the power cord, refer to page 1-2 for information about the voltage switch and fuse.

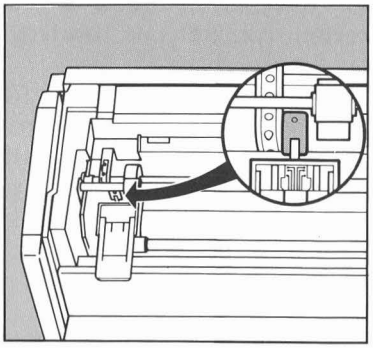
Changing the Print Head

The first symptom of an insufficient ink supply is usually poor print quality for dense images, such as boldface characters, while print quality for normal characters is still good. If the ink bladder inside the print head cartridge is substantially collapsed, you need to change the print head. The setup guide contains some helpful illustrations.

The ink in the print head cartridge contains diethylene glycol, which is harmful if swallowed. Keep new and used cartridges out of the reach of children.

To change the print head:

1. Open the printer lid.
2. Close the printer arm.
3. Open the print head cartridge latch.
4. Remove the old cartridge. (Grasp it by its top ridge and pull up.)
5. Open the printer arm.
6. Note the location of the ink absorber and its placement in the ink absorber holder.



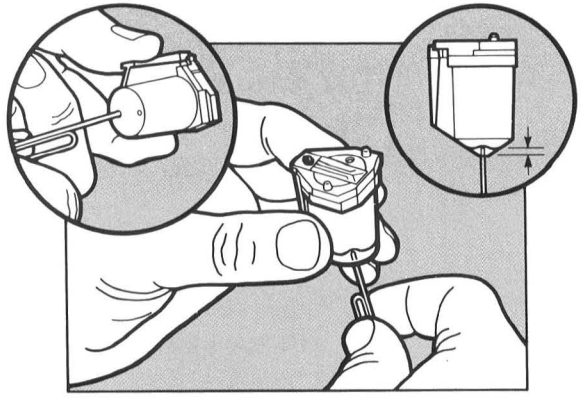
7. Remove the old ink absorber. (Using a tissue, grasp the top of the absorber and pull up.)
8. Discard the old cartridge and ink absorber.
9. Remove the new print head cartridge and ink absorber from the container. **Do not touch the metallic surface of the cartridge.**

10. Install the new ink absorber. (Grasp the ink absorber at one end, with the absorbent side facing the front of the computer, and push the ink absorber into its holder.
11. Close the printer arm.
12. Install the new cartridge. (Grasp the cartridge by its top ridge and lower it into its holder.)
13. Close the print head cartridge latch.
14. Close the printer lid.

If there are dots missing in the printed output, clean the new print head according to the instructions on page A-4. If the new print head stops printing after the first few lines, it may have lost its prime. (A shock to the print head during shipping can prevent the ink from flowing properly.) You can fix this problem as follows:

To prime the print head:

1. Hold the cartridge with the metallic end up and the conical end down.
2. Insert the end of a straightened paper clip into the hole in the center of the conical end.
3. Push up gently until a bead of ink appears on the metallic surface, then remove the paper clip.
4. Wipe the silver-colored metallic surface with a soft tissue. Avoid wiping the gold-colored metallic surface.



Improving Print Quality

The printer should produce sharp, consistent printed output. The following conditions affect print quality:

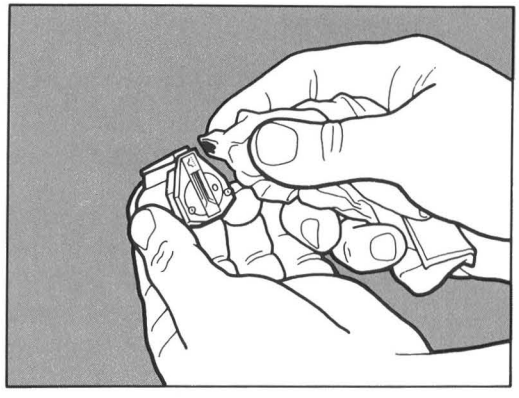
- Use paper intended for Hewlett-Packard ThinkJet printers. Using other types of paper can reduce sharpness and cause smearing, because of slow absorption, and can clog the print head with paper dust.
- The print head must be clean. Instructions for cleaning the print head appear below.
- The print head must contain sufficient ink. If boldface characters look irregular while normal characters look OK, inspect the ink bladder inside the cartridge. If the ink bladder is substantially collapsed, replace the print head according to the instructions on page A-1.

Dried ink, paper dust, or other contaminants can clog the print head. Follow the instructions below for cleaning the print head. If you're unfamiliar with the printer, look at the setup guide for some helpful illustrations.

The ink in the print head cartridge contains diethylene glycol, which is harmful if swallowed. Keep new and used cartridges out of the reach of children.

To clean the print head:

1. Open the printer lid.
2. Close the printer arm.
3. Open the print head cartridge latch.
4. Remove the cartridge. (Grasp it by its top ridge and lift up.)
5. Wipe the silver-colored metallic surface with a soft tissue. Avoid wiping the gold-colored metallic surface. If the print head has been inactive for a prolonged period, dampen the tissue.



6. Install the cartridge. (Grasp the cartridge by its top ridge and lower it into its holder.)
7. Close the print head cartridge latch.
8. Close the printer lid.

Testing the Printer

There is a built-in test that checks the electronic and mechanical operation of the printer. This test is also available using the diagnostic program.

To test the printer:

1. Make sure that the computer is off (the power button is flush with the case).
2. Hold down the (FF) button or the (LF) button (on top of the computer).
3. Switch on the computer. (Don't release the (FF) or (LF) button yet.)
4. After a few seconds, release the (FF) or (LF) button.

   The computer tests the printer's electronics and prints the result. The second line printed indicates whether the printer passed the test and gives the version of the printer controller in your computer. The computer then prints one page (66 lines) of a programmed set of examples.

If the printer fails to print the test page, check for problems as follows.

- Make sure you've correctly loaded paper in the printer.
- Make sure that nothing is blocking the movement of the print head carriage.

Then repeat the four steps above. If you've correctly loaded paper and the carriage is free to move, and the printer still fails to print the test page, the printer failed the test. In this case, refer to the support guide for information about obtaining service for your computer.

Changing the Voltage Switch and the Fuse

The setup guide shows you how to check that your computer's voltage setting matches the voltage of your ac power source. (The voltage of your ac power source is shown pictorially by the type of power cord that fits your power outlet.)

Your computer must have the correct power cord, voltage setting, and fuse for the ac power source in your area. If the power cord and voltage setting are correct, you can assume that the fuse is also correct.

To avoid damage to the computer, check the voltage selector switch before applying power.

To avoid electrical shock to yourself and damage to the computer, use only the power cord specified by Hewlett-Packard for your area. Any replacement cord must have the same polarity as the original.

If the computer voltage switch isn't set to the voltage of your ac power source, you must change the setting of the voltage switch and check that the correct fuse is installed.

To change the voltage setting:

To avoid electrical shock, disconnect the computer from any ac power source before setting the voltage selector switch.

1. Make sure that the power cord is disconnected and that the computer is switched off (the button is flush with the case).
2. Locate the voltage selector switch on the back of your computer. (See the illustration in the setup guide.)
3. Insert the tip of a small screwdriver into the slot on the switch.
4. Slide the switch so that the label for the correct voltage appears. (Slide to the right for 115V; slide to the left for 230V.)

To check or change the fuse:

To avoid electrical shock, make sure that the computer is disconnected from the ac power source before installing or removing a fuse.

1. Make sure that the power cord is disconnected and that the computer is switched is off (the button is flush with the case).
2. Locate the fuse on the back of your computer. (See the illustration in the setup guide.)
3. Insert the tip of a small screwdriver into the slot on the fuse cap.
4. Turn the fuse cap counter-clockwise until you can remove the fuse cap and fuse from the receptacle.
5. Check whether the fuse is correct:
   - 1.5A fuse for 115V operation.
   - T800mA fuse for 230V operation.
6. If the fuse isn't correct, find the alternative fuse shipped with your computer (or get a new fuse from your Hewlett-Packard dealer).
7. Insert either end of the correct fuse into the fuse cap.
8. Insert the fuse and fuse cap into the receptacle, and turn the fuse cap clockwise until it locks in place.

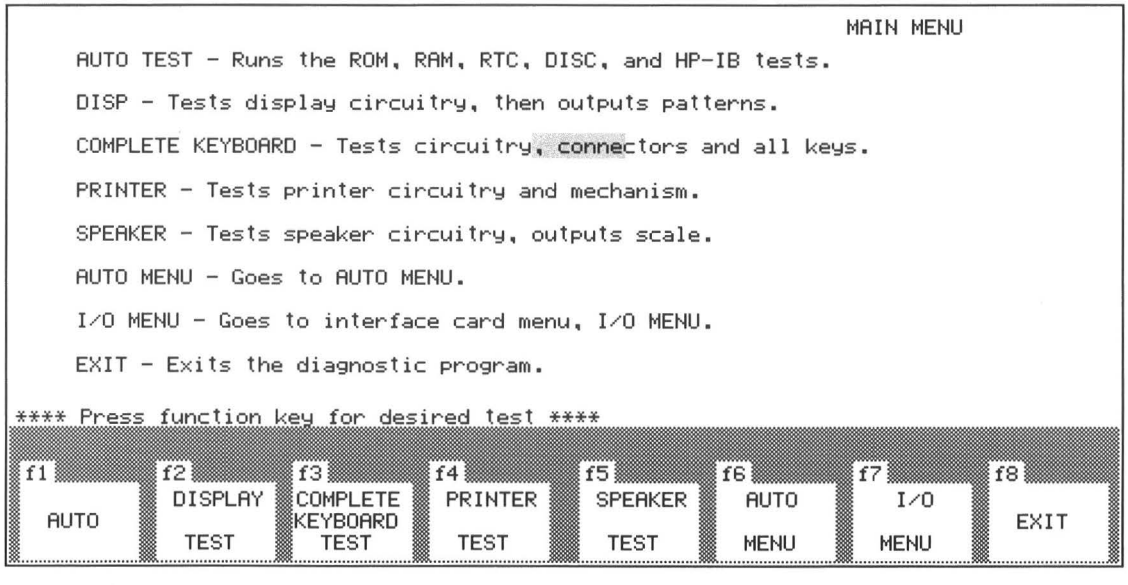
Running the Diagnostic Program

The diagnostic program contains a series of tests that check the computer's operation. For a printed copy of the test results, make sure there is paper loaded in the printer before you run the tests.

To run the diagnostic tests:

1. Switch off the computer.
2. Disconnect everything from the computer except the power cord and keyboard. (Leave memory modules and I/O cards in the computer.)
3. Insert the diagnostic disc.
4. Switch on the computer.
5. Press **Continue** (f1).

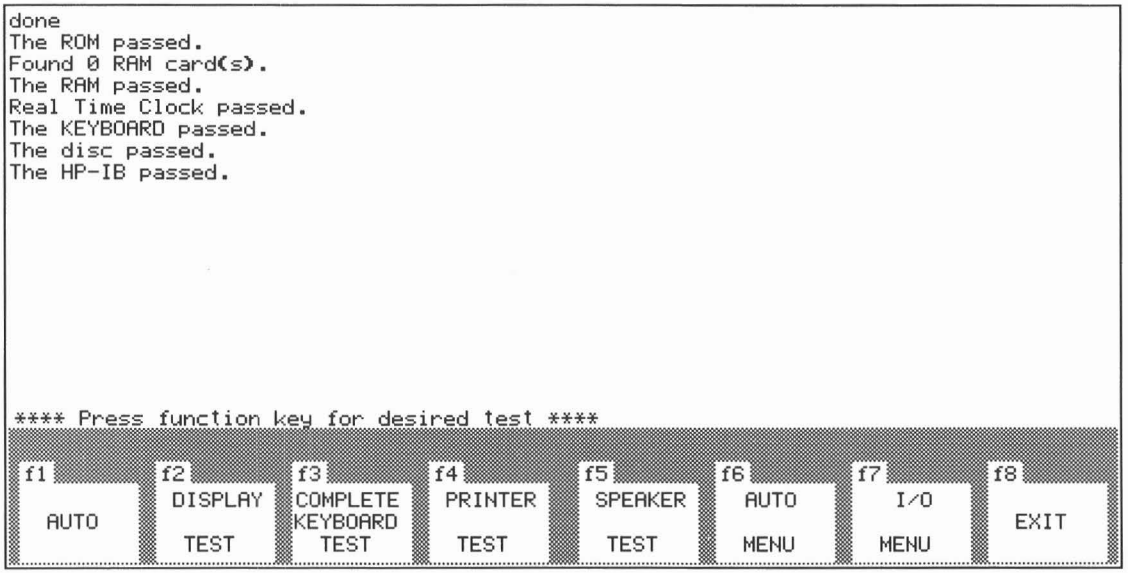
   The display shows:


MAIN MENU
AUTO TEST - Runs the ROM, RAM, RTC, DISC, and HP-IB tests.
DISP - Tests display circuitry, then outputs patterns.
COMPLETE KEYBOARD - Tests circuitry, connectors and all keys.
PRINTER - Tests printer circuitry and mechanism.
SPEAKER - Tests speaker circuitry, outputs scale.
AUTO MENU - Goes to AUTO MENU.
I/O MENU - Goes to interface card menu, I/O MENU.
EXIT - Exits the diagnostic program.
**** Press function key for desired test ****
f1 AUTO
f2 DISPLAY TEST
f3 COMPLETE KEYBOARD TEST
f4 PRINTER TEST
f5 SPEAKER TEST
f6 AUTO MENU
f7 I/O MENU
f8 EXIT

6. Press **Auto** ((f1)).

The diagnostic program tests the computer ROM, RAM, clock, keyboard connection, disc drive, and the HP-IB interface. These tests require no participation on your part. As each test is completed, the program displays and prints the result.

If all tests are completed without problems, the display shows:



If any test discovers a problem with your computer, an error message specifying the problem is displayed and printed. In this case, save the printed output or write down the error message. Then refer to the support guide for information about obtaining service. When you send your computer for servicing, be sure to include the results of the diagnostic test.

7. If you think there's a problem with the display, keyboard, printer, or speaker, press the function key for the desired test. These tests require your participation. Follow the instructions that are displayed and printed at the start of each test.

   If any test indicates a problem with the computer, first repeat the test to confirm the problem. If you can confirm the problem, make a note of the symptoms. Then refer to the support guide for information about obtaining service. When you send your computer for servicing, be sure to include your note of the symptoms.

8. To run one part of the Auto test as a separate test—for example, to test RAM:

   a. Press **Auto Menu** (f6). The display shows:

```
                                                        AUTO MENU
    ROM - Performs checksum of the read only memory.

    RAM - Tests both internal and external random access memory.

    REAL TIME CLOCK - Tests the RTC circuitry.

    SHORT KEYBOARD - Quick test of keyboard hardware.

    DISC - Tests disc circuitry, reads and writes to the disc.

    HP-IB - Tests HP-IB circuitry.

    I/O MENU - Goes to interface card menu, I/O MENU.

    MAIN MENU - Goes to the MAIN MENU.

**** Press function key for desired test ****
```

f1	f2	f3	f4	f5	f6	f7	f8
ROM TEST	RAM TEST	REAL TIME CLOCK TEST	SHORT KEYBOARD TEST	DISC TEST	HP-IB TEST	I/O MENU	MAIN MENU

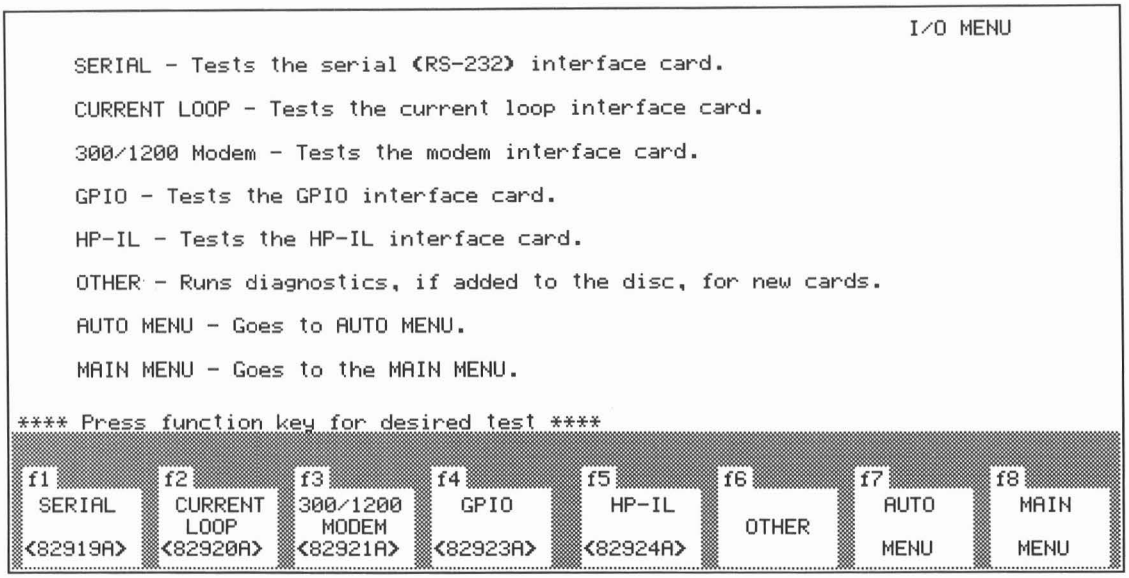
   b. Press the function key for the desired test.

   c. Note the test results.

   d. Press **Main Menu** (f8) to return to the main menu.

9. To test an I/O device plugged into the computer, such as a modem or serial interface:

a. Press **I/O Menu** (f7). The display shows:


I/O MENU
SERIAL - Tests the serial (RS-232) interface card.
CURRENT LOOP - Tests the current loop interface card.
300/1200 Modem - Tests the modem interface card.
GPIO - Tests the GPIO interface card.
HP-IL - Tests the HP-IL interface card.
OTHER - Runs diagnostics, if added to the disc, for new cards.
AUTO MENU - Goes to AUTO MENU.
MAIN MENU - Goes to the MAIN MENU.
**** Press function key for desired test ****
f1 SERIAL <82919A>
f2 CURRENT LOOP <82920A>
f3 300/1200 MODEM <82921A>
f4 GPIO <82923A>
f5 HP-IL <82924A>
f6 OTHER
f7 AUTO MENU
f8 MAIN MENU

b. Press the function key for the desired test.

c. Note the test results.

d. Press **Main Menu** (f8) to return to the main menu.

10. Eject the diagnostic disc.

11. Switch off the computer.

Clock Accuracy

The computer clock is typically accurate to within 30 seconds per month, with an accuracy of 120 seconds per month for worst-case operating temperatures. The quartz crystal in the clock is affected by temperature, physical shock, humidity, and aging. Optimum accuracy is achieved at 25°C ± 5° (77°F ± 9°). An extreme change in environment can cause the clock to require adjustment.

Serial Number

Each Integral PC carries an individual serial number on the rear panel. We recommend that you keep a separate record of this number. Should your unit be lost, the serial number is often necessary for tracing and recovery, as well as for insurance claims. Hewlett-Packard does not maintain records of individual owners' names and unit serial numbers.

Potential for Radio/Television Interference (for U.S.A. Only)

The Integral PC generates and uses radio frequency energy. If not installed and used properly—that is, in strict accordance with the instructions in this manual—the computer can cause interference to radio and television reception. It has been tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation.

In the unlikely event that your computer does cause interference to radio or television reception (which can be determined by turning the computer off and on), you are encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna.
- Reorient the computer with respect to the receiver.
- Move the computer away from the receiver.
- Plug the computer into a different ac outlet so that the computer and the receiver are on different branch circuits.

If necessary, you should consult your dealer or an experienced radio/television technician for additional suggestions. You may find the following booklet, prepared by the Federal Communications Commission, helpful: *How to Identify and Resolve Radio-TV Interference Problems*. This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402, Stock Number 004-000-00345-4.

B Glossary

active menu: The menu currently displayed, which indicates the commands currently assigned to the function keys. The name of the active menu appears in the status block (in the middle of the menu).

active window: The window that currently receives your input from the keyboard; usually the window in front. The name of the active window apears in the status block (in the middle of the menu). *See also* **select a window**.

autostart program: A program stored on a disc that starts automatically when you turn on the computer.

backup disc: A copy of a master disc or a working disc that you create and then store in a safe place. If the master or working disc is lost or damaged, you can make a new copy from the backup disc.

command line: The second line of the PAM window. Any input you type to the PAM window goes to the command line.

current line: The line of text that contains the cursor.

destination: The file, folder, or disc to which data will be sent. *See also* **source**.

directory: Another name for a folder.

display pointer: A small figure used to indicate an item or location on the display.

"drive busy" light: The red light near the lower-right corner of the disc drive. When the computer is reading from or writing to a disc, this light comes on to warn you not to eject the disc.

file system: The hierarchical structure of folders and files, used to store and organize information in the computer.

folder: A collection of files, other folders, or both. (Also called a *directory*.)

function keys: Keys (f1) through (f8) at the top of the keyboard. *See also* **function-key label**, **menu**.

function-key labels: Individual elements in the menu at the bottom of the display. Each function-key label displays the command currently assigned to the corresponding function key. *See also* **function keys**, **menu**.

highlight: In the PAM window, to indicate a displayed name by moving the inverse bar to that name.

menu: The set of function-key labels at the bottom of the display. The most commonly used menus are the User menu and the System menu. *See also* **function key**, **function-key label**.

open folder: The folder whose contents are currently listed in the PAM window.

path name: An extended name that includes the names of outer folders. Example: /MEMOS/January/Re:Sales.

README: A text file, stored on a disc, that describes the contents of the disc.

root: The outermost level of the computer's entire file system.

select a window: To choose a window to be the active window. *See also* **active window**, **shuffle windows**.

shuffle windows: To move the front window to the back, bringing the next window to the front and making it the active window. Performed by pressing (Shift)(Select). *See also* **active window, select a window**.

source: The file or disc from which data will be sent. *See also* **destination**.

status block: Displays the names of the active window and the active menu. Located at the bottom of the display, in the middle of the menu.

System menu: The menu containing the most common commands for window control.

text file: A file that contains text or other data in a character format.

top of form: The position of the first printed line on each page.

User menu: The menu containing commands to control a program.

window: The part of the display used for a particular program. Your input to the program and its displayed output are contained in the program's window. *See also* **active window**.

window banner: The tab on the upper-left corner of a window that contains the name of the window.

write-protect tab: The red tab in the corner of each disc. The position of the tab determines whether the computer can alter the contents of the disc.

working disc: A disc that you commonly use while working at the computer. *See also* **backup disc**.

C Messages

The following messages appear in the top line of the PAM window if PAM can't execute your command. Only messages that can result from the procedures in this guide are listed below. Refer to the comprehensive guide for a listing of all PAM error messages.

Read the explanation that follows each message for hints about solving the problem. Where the listing below shows *file name* or *folder name,* the actual message shows the name of the actual file or folder.

`Sorry, no more memory.`

The programs currently running use all of the computer's memory. Stop any unneeded programs.

name `cannot be found.`

PAM doesn't understand the command you typed in. If *name* is a command, such as `makefolder` or `print`, check the spelling. If *name* is a file name, make sure it's listed in the open folder.

`Cannot create` *file name*`.`

1. Make sure that the destination disc is write-enabled (the red tab blocks the hole in the corner). 2. There may not be enough room on the disc for a new file. Refer to the comprehensive guide to learn about the verify_disc program on the utilities disc.

file name exists and cannot be overwritten.

Make sure that the destination disc is write-enabled (the red tab blocks the hole in the corner).

C

Cannot delete *name*.

Make sure that the disc is write-enabled (the red tab blocks the hole in the corner).

Cannot delete the open folder.

Press **Close** (f8). The next outer folder becomes the open folder, and the folder you want to delete is listed among the contents of the outer folder. You can then delete the folder.

folder name is not empty so it cannot be deleted.

Move or delete all files in the folder. You can then delete the folder.

Cannot copy *folder name*.

You must create a new folder and copy the files in the original folder to the new folder.

Cannot move a folder between discs.

You must create a new folder on the destination disc and move the files in the original folder to the new folder.

Cannot move a folder into itself.

You can't introduce circularity into the file system—for example, you can't move Folder1 into Folder2 if Folder1 contains Folder2. First move Folder2 so it is no longer contained in Folder1, and then move Folder1 into Folder2.

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